VICTORY BUY

MAY, 1945

Industrial FINISHING

Published Monthly in the Interest of Product Cleaning and Painting

The KEY to the "right" finish

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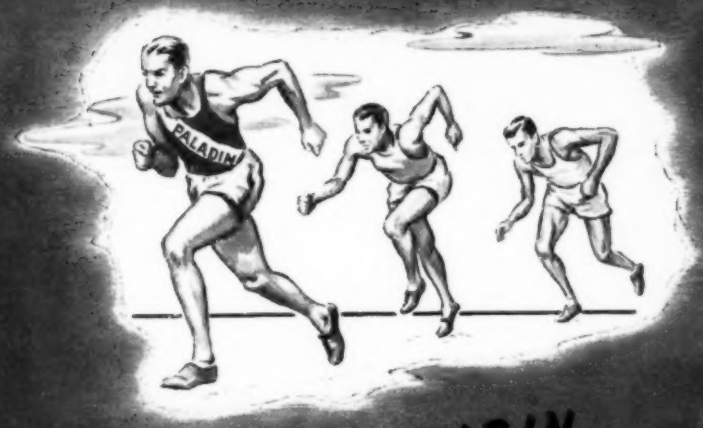
MAY 23 1945
DETROIT

We have been making finishes for 80 years (since 1865) . . . and more important, we have been making specific finishes for specific products and purposes for 24 years (since 1921). Fourteen years ago we adopted the slogan "With the right finish —you'll finish right". This slogan applies in war or peace, in good times or bad. The name LILLY is truly the KEY to the right finish for your product.

LILLY VARNISH COMPANY
Indianapolis, Indiana
Branches : Chicago, Ill.; Grand Rapids, Mich.; Gardner, Mass.
THE LILLY COMPANY, High Point, North Carolina



Plastic base PALADIN

gets a head start on OXIDATION

Zinc plated parts present a difficult finishing problem because of the film of oxidation that occurs between the plating operation and the time they reach the finishing room. Any manual handling during this time further contributes to poor adhesion.

Instead of trying to remove this film of oxidation you can prevent its occurrence with Water Dip Paladin. As a final step in the plating process, after the final rinse, parts may be plunge-dipped in Water Dip Paladin which dries more quickly than water evaporates, and may then be finished with conventional top coats, firmly anchored with Paladin's permanent adhesion.

If you are troubled with finish failures on zinc plated parts you will want to know more about this versatile primer. Write to Dept. 801 for technical information.

ROXALIN *Flexible* FINISHES
INCORPORATED
ELIZABETH, P. ● NEW JERSEY

ONLY ROXALIN MAKES PALADIN

TECHNOLOGY DEPT.

ENTHONE Zinc STRIPPER

ENTHONE presents a new fast acting non-electrolytic alkaline stripper for zinc (Patent Pending).

Commercial tests for the past year prove these qualities:

1. *One-thousandth of an inch of zinc stripped in less than one minute.*
2. *No rusting, etching or attack on steel. No matter how many times zinc is stripped there is no attack on the base steel.*
3. *Simple to use and economical to operate.*

Only equipment required is a heated steel tank. Operates from 200° to 215° F.

Strip defective zinc work or plating racks the modern Enthone way.

Order a trial quantity for a convincing demonstration.

THE ENTHONE COMPANY

Chemical Products—Electroplating Equipment

441 Elm Street, New Haven 2, Conn.

The Sterling 1000 quickly deburrs drilled, punched and stamped metal parts.

Shop men everywhere tell us that dozens of sanding jobs are now done in maintenance, heavy-duty production, and manufacturing in half the time with the Sterling 1000 Portable Electric Sander.

The Sterling 1000 performs equally well on wood, metal or plastics . . . sands undercoats, finished coats of paint, enamel, lacquer or varnish. Laps, polishes and rubs. Eliminates slow, tedious hand-sanding.

Designed for faster, cleaner sanding, the Sterling 1000 pays for itself in no time! See for yourself . . . ask your local distributor for a demonstration or write: STERLING TOOL PRODUCTS CO., 365 E. OHIO ST., CHICAGO 11, ILL.

Sterling is the only manufacturer of both portable electric and air-driven finishing sanders—sold by leading distributors.

STERLING 1000 PORTABLE ELECTRIC SANDER

TWENTY-FIRST YEAR OF PUBLICATION

Industrial FINISHING

W. H. ROHR, Editor E. A. DOSCH, Assoc. Editor

Vol. XXI, No. 7 MAY, 1945 $2.00 a Year

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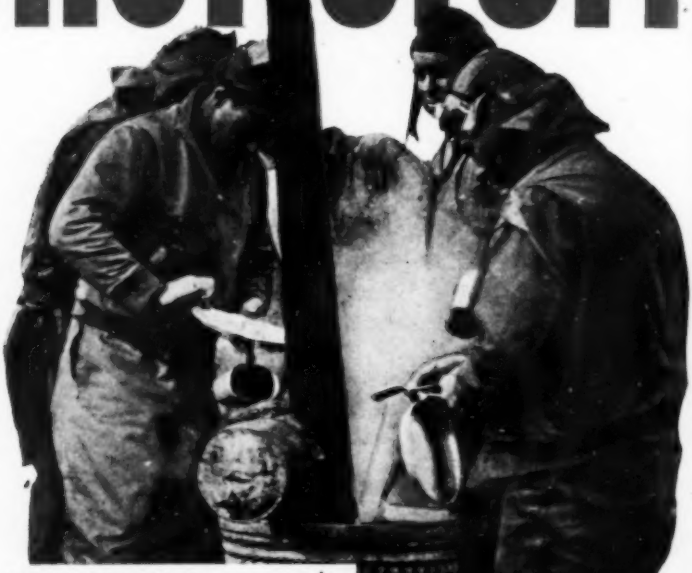
HOT STUFF



MESS KITS CLEAN FAST in the steaming hot water of fuel-burning immersion heaters produced by Lonergan Mfg. Company. Boiling water is obtained quickly under any conditions, in all climates.

1. **HOOK, LINE AND HEATER!** A specially developed Sherwin-Williams hook carries three parts of the heater to dip tanks and baking ovens. Fourth part rides separately

2. **PRIMING DIP** of S-W Quick Bake Red Oxide primer is done by hand. Parts are then replaced on hooks for draining.

1

SHERWIN-WILLIAMS

in a hurry!

SHERWIN-WILLIAMS helps Lonergan Mfg. Co. speed up finishing of Army Immersion Heaters!

BAKING AS THEY RIDE, the four parts of the heater which have received finish coats travel through the infra-red oven where they get their final bake. Next and last stop is the assembly department.

Hot water means comfort and health to our fighting men! To obtain it under all conditions, the Quartermaster Corps supplies lightweight, efficient immersion heaters.

The Lonergan Mfg. Company of Albion, Michigan, faced a tough finishing operation problem before the four parts of this vitally needed heater could be conveyed as a unit, dipped and dried in the required time.

Sherwin-Williams technicians came through with the solution! They developed a new type conveyor hook to hold and drain three of the four parts of the heater after hand dipping. The fourth part was hung on a separate hook. Drainage difficulties were thus overcome, making it possible for all parts to ride the conveyor line together. Result? Speedy assembly and production!

To meet stiff government quality finish specifications, S-W Quick Bake Red Oxide primer and Olive Drab Lustreless Enamel were used for the two-coat finish.

Just another example of the way in which world-famous Sherwin-Williams experience and "know-how" is aiding industry. Perhaps we can help you, too! Write the Sherwin-Williams Co., Cleveland 1, Ohio.

INDUSTRIAL FINISHES

Letters from Readers

Paint Drying Article Wanted

We have been referred to an article entitled, "Convection vs. Radiant Heat Paint Curing Equipment," by R. J. Fairburn, which appeared in your March issue of INDUSTRIAL FINISHING. We would deeply appreciate having a reprint of this article or copy of your March issue.—D. AIRCRAFT CORP.

Copy is being sent.—ED.

Detearing; Z. C. Primer

The Bureau of Aernoautics would appreciate receiving information pertaining to detearing equipment for use in the application of permanent baked resin coatings of approximately 0.0004-in. thickness to the internal steel parts of aircraft engines.

A reprint of the article by Paul O. Blackmore on "The Theory and Use of Zinc Chromate Primers" would also be appreciated.—NAVY DEPT.

Inquiry serviced.—ED.

Marbleizing Wood

I am interested in a process of marbleizing wood, that is, making imitation marble on wood. Can this process be sprayed?—S. P.

We are sending you some information on this subject, as previously published in INDUSTRIAL FINISHING.—ED.

Infra-Red Drying

We are interested in obtaining any kind of information or literature that would be helpful in accomplishing a fast-drying process of finishing materials on wood cabinets under forced conditions, such as infra-red lamps.

We will deeply appreciate any information you may give us on this subject, or any references to any other authoritative sources, including published literature, where we may obtain additional information. — LIBRARY OF INDUSTRIAL RESEARCH.

We are referring you to concerns that manufacture and install this type of equipment.—ED.

Tumble Finishing

While at a friend's house I came across an article reprinted by you from your Sept. and Oct. 1941 issues, on Tumble Finishing by R. J. Fairburn and Thomas F. Richardson's article on Tumble finishing, in your magazine in November 1940. I would appreciate it greatly if you could possibly send me a copy of same, and also a copy of whatever else you may have on tumble finishing.

This would be of great help to me, as that is the precise work I am engaged in at the present time, and there is always something new to learn.—M. P. C.

Copy of reprint supplied.—ED.

Sealed Tubes

We are interested in obtaining more information about the waterproof paintproof sealed tubes, which are described in the April issue of INDUSTRIAL FINISHING in the article, "Coating Small Parts for Aircraft", and which are used to carry shop orders on the conveyor through the washing and painting operations.—Y. Co.

We are referring your inquiry to the author of the article.—ED.

Dip Tanks; Agitators

Could you furnish us with specific information as to manufacturers or distributors of lacquer dipping tanks and agitators?—B-C Co.

Information supplied.—ED.

Paint-Drum Rack

We are greatly interested in the 2-deck paint and oil storage drum rack illustrated on page 38 of your January issue of INDUSTRIAL FINISHING. We would appreciate any further informa-

(Continued on page 8)

● IT'S JUST POSSIBLE THAT WE MAY BE ABLE TO SUPPLY

COULD BE!! THE FINISHING MATERIALS YOU'VE BEEN LOOKING FOR.

Some items are now available and we have perfected so many new non-priority products that you may be agreeably surprised.

Write us about . . .

- *Lacquer Enamels*
- *Synthetic Enamels*
- *Clear Coatings*
- *Stains—Fillers*
- *Hot Lacquers*
- *Toy Lacquers, Etc.*

V. J. DOLAN & COMPANY, INC.

Manufacturers of "UNQUESTIONABLE QUALITY" *Industrial Finishes*

1830 N. Laramie Ave. Chicago 39, Illinois

Phone BERkshire 0100

ARE *Your* PRODUCTION FACILITIES GEARED TO POSTWAR DEMANDS?

We are in a position to assist you in modernizing your production facilities. With a background of 25 years of industrial engineering and the past 16 years devoted exclusively to the furniture and woodworking industry we have acquired the experience and know-how that have produced the country's outstanding conveyor systems from lumber yard through machine room, cabinet room, finishing room to warehouse and shipping platform.

DAVIDSON ENGINEERING SERVICE

CONSULTANT ENGINEERS

BOX 2941 WINSTON-SALEM, N. C.

CONVEYOR SYSTEMS · LABOR SAVING DEVICES · PLANT LAYOUT

DESIGNERS OF SPECIAL EQUIPMENT

NEW
Improved
RUST
Remover

Flexible Enough to Handle a Wide Variety of Jobs

Thoroughly "production-tested", Phillips L-109 is an unusually effective solution designed especially for removing rust and corrosion. It prepares surfaces for painting—does not attack clean metal—but in fact protects steel and iron from further rusting for considerable periods. Can be used cold or hot—and in dilution depending on job to be done. Is also effective for phosphatizing process.

Send for Catalog of Controlled Cleaning Compounds and Solvents for Every Need

Write today for prices and full details on Phillips L-109 Rust Remover—also for information on Phillips specialized cleaners developed for every type of cleaning job—degreasing, paint stripping, spray booth and floor masking, descaling, dishwashing, bottle washing, electro cleaning, interior cleaning, glass cleaning, brass cleaning and mechanics' hand soaps and liquid soaps.

Phillips Chemical Co.
3482 W. Touhy Ave., Chicago

tion you could furnish us in connection with plans or the building of this equipment.—H. MACHINE CO.

We are referring you to the designer and manufacturer of the equipment—a concern here in Indianapolis.—ED.

Vacuum Cleaning Outfit

In your March 1945 issue, on page 30, there is an illustration of a large size vacuum cleaning outfit. Would you please furnish us with the names of the engineers or manufacturers of the equipment?—T. E. CAR CO.

We are not sure about the outfit illustrated, but an excellent one is illustrated and advertised in every other issue of this magazine.—ED.

Wood Graining

Can you direct us to a firm that makes copper photo engraved plates for offset wood graining technique? We have lost their address in some manner, but believe they are in Camborn, N. J.—J. W. & CO.

We question whether any of the copper plates are available at the present time, owing to the fact that copper has been a critical metal in this country during the war. However, you might make inquiries from some of the concerns we are listing in a letter to you. The one you had in mind in New Jersey is probably Chambron Corp., Garfield, N. J. Others are named in our letter.—ED.

Silk Screen Stenciling

We will welcome and deeply appreciate any information you may give us on a silk-screen printing machine. Your catalog describing machine, its uses, and price list will be gratefully received.

References to magazine articles covering this subject will also be appreciated, or any references to other authoritative sources where we may obtain additional information.—LIBRARY OF INDUSTRIAL RESEARCH.

Portable Sander

Do you know the name of a manufacturer of a portable sander, electric driven, which has a reciprocating motion? We know there is one advertised in your magazine with an oscillating motion, but we are interested

(Continued on page 108)

Striking New EYE APPEAL for Your Postwar Steel Products

HERE'S news about some striking finishes which Glidden has developed to give amazing new eye appeal and *sales* appeal to postwar steel products.

Glidden has developed Metalescent Ground Colors, for example, which impart sparkle and life to a finish when used under graining inks. New Glidden Translucent Ground Colors permit brilliant metallic backgrounds to show through—to beautiful advantage. And Glidden has formulated Ground Colors and Graining Inks which can give steel the lovely grain and coloring of any wood known . . . or simulate leather grain, fabric weaves, marble or Mother-of-Pearl.

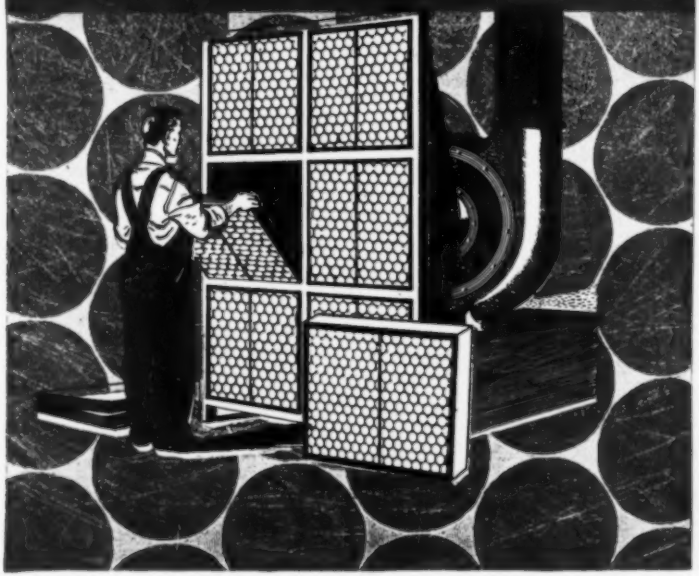
Glidden will provide a formula to match any color you wish . . . tell you where to get graining plates and other necessities . . . help you solve any finishing problems. For *every* reason, call on Glidden *first* in considering added eye appeal for your postwar products of steel.

THE GLIDDEN COMPANY • CLEVELAND 2, OHIO

TIME-TESTED

GLIDDEN · *Pacemaker in Paints*

Celanese* Chemicals



LINDOL IS A NON-FLAMMABLE, ODORLESS, EFFICIENT DUST ADHESIVE FOR FILTERS—Lindol is used in more than 75% of the filters in air-conditioning and forced air systems because of its excellent adhesive and wetting powers. Besides effectively catching dust, it reduces the combustible potentials of flammable particles, is non-flammable, non-oxidizing and non-volatile.

CELANESE CORPORATION OF AMERICA

VERTICAL RESEARCH

. . . key to the development of synthetics

THE VERY NATURE of synthetics—their limitless potentials—demands research equally advanced. For the whole idea of synthesis is far more than just so many new chemicals.

Synthetics actually have relieved industry of long, costly searches for remote materials—materials which may only approximate advanced needs.

Celanese research has long specialized in selected fields—plentiful, low-cost base materials of maximum potentials. By intensive, *vertical* development Celanese expands their usefulness.

One group of hydrocarbon derivatives alone has greatly aided chemical engineers—the Lindol family of organic phosphates pioneered by Celanese.

From the original Lindol, an improved plasticizer, each variation is tailored to a specific need. As a lubricant additive, Lindol brings higher film strength to modern aviation motor oils—to resist high temperatures—to dissolve resinous deposits.

*Reg. U. S. Pat. Off.

A series of formulas made possible tougher quick-drying lacquers for non-toxic films coming in contact with foods. Again, Lindol is an important component of anti-fouling paints used on the hull-bottoms of naval craft.

On warships Lindol in vinyl compounds provides tough, non-flammable, non-oxidizing coatings for electrical cables. Lindol as the sealing fluid in die-casting machines prevents fires from explosions. A steel company uses a type of Lindol to lubricate copper molds receiving molten metal.

Problems of viscosity, stability, specific gravity, polishing, cooling, solubility, plasticizing, emulsifying—all are welcomed by Celanese research—and in terms of the exact characteristics specified.

It's the way we like to work. May we have the opportunity of working with *you?* Celanese Chemical Corporation, a division of Celanese Corporation of America, 180 Madison Avenue, New York 16, New York.

PLASTICIZERS
ORGANIC PHOSPHATES
LUBRICANT ADDITIVES
INTERMEDIATES
DYE-STUFFS

TEXTILES • PLASTICS • CHEMICALS

"Hard as nails"

That's an expression typical of

WALKER FINISHES

primers — lacquers — surfacers —
synthetics — wrinkles
special coatings

***They are durable, of lasting quality, providing decorative and protective coatings that really stand up. "Call on Walker"**

H. V. WALKER CO.
Elizabeth, New Jersey
MODERN PRODUCTION FINISHES

LET *Mahon* EQUIP YOUR PLANT FOR BONDERIZING

Bonderizing solution is sprayed against every surface of work being processed as it passes through an conveyor

For as many years as *Bonderizing* has been in use, Mahon engineers have been planning, producing and installing equipment essential to its proper application. Hundreds of Mahon-engineered installations are now in operation. Whether you require a bonderizing unit to fit into your present production line—or whether you desire an entirely new and modern finishing system—you can completely rely upon the knowledge and experience of Mahon engineers to design and build equipment that will conform to your plant and products.

Typical Mahon Bonderizing installation. Next steps in production are through Drying Oven, Spray Booth and Baking Oven, also designed built and installed by Mahon.

THE R. C. MAHON COMPANY

DETROIT 11 CHICAGO 4

Manufacturers of Metal Cleaning Machines • Rust Proofing Machines • Hydro-Filter Spray Booths • Ovens of All Types • Filtered Air Supply Units • Hydro-Foam Dust Collectors—and Many Other Units of Special Production Equipment—including Complete Finishing Systems

Keeping an Electric Eye

GLOSSMETER • • • checks sheen variations

Besides checking the color and observing flowing and leveling properties of sample finishes, the SHEEN is also compared with established standards. This can be done by a visual examination in most instances. But if it should become necessary to check variations in sheen very minutely, the human eye gives way to an "electric eye"—in this instance, the GLOSSMETER—a photoelectric device which measures gloss at a 60-degree angle.

on Pittsburgh Paints!

Another Example of Pittsburgh's Ceaseless Vigilance to Produce Industrial Finishes of *Uniform High Quality*

EVERY mechanical testing device known to paint making can be found in Pittsburgh's huge Analytical and Testing Laboratories. Electronic instruments, ultra violet ray apparatus, baking and freezing cabinets, accelerated weather wheels, salt spray cabinets and blistering equipment—all are used for testing and checking color permanency, texture, sheen, drying and other qualities.

Production batches are critically compared with established standards for hiding, spreading, wearing and other properties. Raw materials, including pigment, oils, resins, solvents and thinners, are checked and double-checked to make certain the finished products measure up to Pittsburgh's rigid standards of uniform workability, appearance and serviceability.

Out of all this ceaseless vigilance comes a line of Industrial Finishes for YOUR purpose that you can *depend* on for uniform high quality and "plus" over specifications. Ask for facts and figures!

Pittsburgh Paint Flies with the "MARS"

This gigantic craft of the U. S. Navy needs more than 100 gallons of Pittsburgh Zinc Chromate Primer to protect her metal parts against the corrosive effects of salt air and spray. Her fabric surfaces are covered with 80 gallons of Pittsburgh Nitrate Dopes—clear dope to tighten the fabric and pigmented dope for final color coats. Pittsburgh makes a wide variety of Aircraft Finishes for every purpose.

PITTSBURGH PLATE GLASS COMPANY, Industrial Paint Division, Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Division, Detroit, Mich. The Thresher Varnish Co., Dayton, O.

PITTSBURGH *Industrial* **FINISHES**

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

New high-solids lacquer . . .

The new high-solids lacquers can give twice the covering power of old-style lacquers . . . enable operators to complete more pieces in a given time . . . because they provide far thicker coatings when dried. Each coat now does the work of two! The answer is more solids, less solvent. Yet, despite the new finishing speeds and economies afforded, their durability and appearance are not sacrificed. For production line finishes on metal, wood, fabric, glass, rubber, leather, paper, plastics—use high-solids lacquers and save!

» LIKE GIVING EACH SPRAY OPERATOR TWO GUNS

ASK YOUR LACQUER SUPPLIER

for complete details and application data on these new time-and-money-saving lacquers, as they become available. Hercules does not make high-solids lacquers, but concentrates on the production of the highest quality nitrocellulose from which they are made.

CL-53A

HERCULES

Cellulose Products Department

HERCULES POWDER COMPANY

INCORPORATED

928 Market St., Wilmington 99, Del.

THE PRIMER WITH THE *Two-Way Stretch!*

THIS primer will give your metal parts the finest, smoothest "foundation" you've ever known for government specification finishes, lacquers and synthetic enamels. It is the only dipping primer with a "two-way stretch". It actually flows backward, levelling out perfectly smooth—with no beading.

Its adhesion to metal is extraordinary. Its film is thoroughly flexible. And its performance in the dip tank has amazed one customer after another, who find it necessary to clean their tanks far less frequently—as little as once a year in some cases!

Want complete performance records? Write us. Ask for a quotation on your requirements.

O'BRIEN VARNISH CO.,
SOUTH BEND 21, IND.

O'BRIEN'S GRAY DIPPING PRIMER 7062

O'BRIEN
INDUSTRIAL FINISHES
SINCE 1875

NOT THE MOST – JUST THE BEST

For Assured Dependability in Finishing

FINISHING EQUIPMENT

Get a System that's Despatch Engineered

OVENS
BONDERIZERS
DRYERS
CONVEYORS
WASHERS, FANS
AIR CONDITIONERS
SPRAY BOOTHS
Type *Monorail*

● Typical installation of a Despatch monorail-conveyor oven. Illustrates unusual capacity for rapid finish-baking of painted flatware, refrigerator panels and similar materials. Continuous monorail extends through oven chamber, then rises above work-level to save space and accelerate load movement.

Despatch Oven is convection heated. Available in complete range of sizes and types, gas, electric or oil-fired.

YOU'LL SAVE TIME AND EXPENSE in equipping your finishing department (whether you need a single piece of equipment or a complete finishing system) by asking Despatch to handle *all* details—from selection to installation.

Learn more about this specialized engineering service and its unusual advantages.

WRITE FOR DETAILS:

DESPATCH OVEN COMPANY MINNEAPOLIS 14 MINNESOTA, U.S.A.

Despatch Oven Co.
221 N. LaSalle
Chicago 1, Ill.

Despatch Oven Co.
619 9th St. S. E.
Mpls. 14, Minn.

HORN *suggests—*

KERATYN

NEW • LOW BAKE • QUICK BAKE

PORCELAIN LIKE FINISH
NO DISCOLORATION
CLEAR AND IN ANY COLOR
ANY DEGREE OF GLOSS

A. C. HORN COMPANY
PRODUCTS FINISHING DIVISION
LONG ISLAND CITY 1, NEW YORK
CHICAGO • HOUSTON • LOS ANGELES

PROVE IT—FOR YOURSELF

PENETRAY

TRADE MARK

OFFERS THIS PROPOSITION TO YOU WHO USE SYNTHETIC BAKING ENAMEL

HALF SIZE PHOTO UNRETOUCHED

Excellent Adhesion

Just paint two identical pieces of metal and bake one under a standard 250 watt Infra-red lamp—the other under Penetray—with all other factors constant.

HALF SIZE PHOTO UNRETOUCHED

Poor Adhesion

YOU OWE IT TO YOURSELF TO MAKE THIS SIMPLE TEST

We make the unqualified statement that with four different lots of synthetic enamel, each made by a different manufacturer, with all other factors constant, we consistently get superior adhesion where Penetray is used in place of ordinary Infra-red lamps.

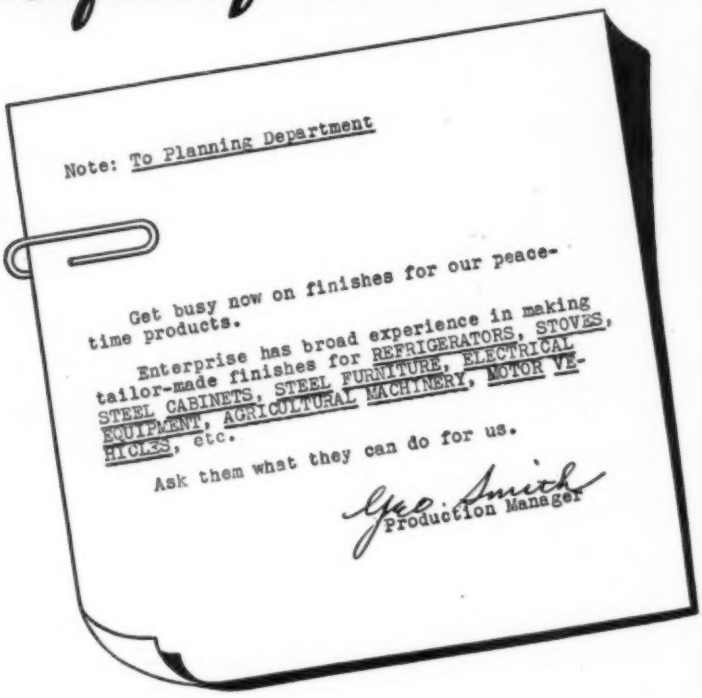
•

By equivalent bending, the effect shown in the illustration results. The same is true of corrosion tests.

INQUIRY IS INVITED—SALES ENGINEERS WILL CALL OR LITERATURE WILL BE SENT—WRITE

VERD-A-RAY CORP. TOLEDO 5, O.

Request from Production


Note: To Planning Department
Get busy now on finishes for our peace-time products.
Enterprise has broad experience in making tailor-made finishes for REFRIGERATORS, STOVES, STEEL CABINETS, STEEL FURNITURE, ELECTRICAL EQUIPMENT, AGRICULTURAL MACHINERY, MOTOR VEHICLES, etc.
Ask them what they can do for us.
Geo. Smith
Production Manager

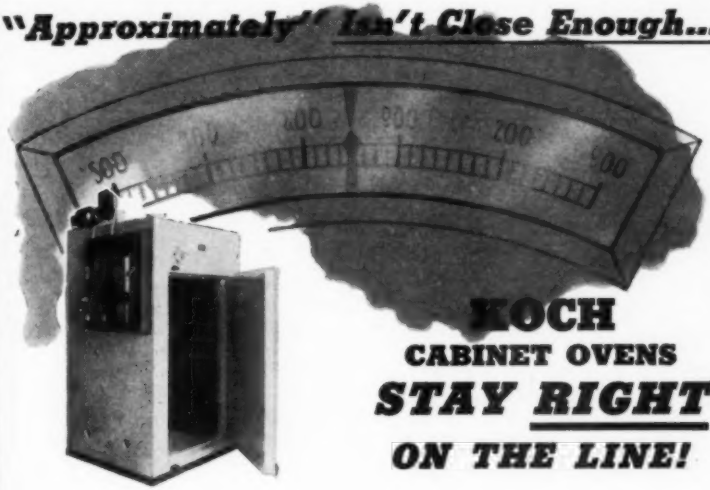
Your Inquiry Will Be Given Prompt Attention

ENTERPRISE PAINT MFG. CO.

Industrial Division

PEORIA & VAN BUREN STS. CHICAGO, ILL.

"Approximately" Isn't Close Enough...



KOCH
CABINET OVENS
STAY RIGHT
ON THE LINE!

When you set your KOCH Cabinet Oven controls for a certain temperature, you get it . . . **right on the line!** This dependable accuracy . . . plus proven construction features . . . keep KOCH Ovens **RIGHT on your production line,** too . . . day after day . . . year in and year out!

CONTROLLED RECIRCULATION ASSURES UNIFORM BAKING

Controlled cross-flow recirculation gives uniform baking, curing, or drying . . . every time, in all parts of the oven.

GEORGE KOCH SONS, INC.
INDUSTRIAL EQUIPMENT
EVANSVILLE 4 INDIANA

Made in 7 standard sizes, KOCH Cabinet Ovens are assembled from standardized units, pretested at the factory, and come to you completely equipped, ready for quick installation. A wide range of special equipment available.

SELECTIVE CONTROL AT ALL TEMPERATURES

For electric, gas or steam heat. Temperature ranges from 150° to 550° F., automatically controlled. For full information, send for Bulletin AB . . .

PUT YOUR BAKING PROBLEM UP TO KOCH ENGINEERS

KOCH has designed and built finishing equipment for hundreds of special jobs . . . from toys to tanks, pharmaceuticals to planes! If YOU have a special baking or drying problem, leave it up to KOCH! Phone, Wire or Write Today.

PLASTO-PAK is a COLD DIP* Strip Coating designed to prevent corrosion, tarnishing, or scratching of metals during production, assembly, shipping or storage.

* Plasto-Pak can also be sprayed.

Approved for Method IB Packaging by U. S. Army Signal Corps.

Write for Technical Bulletin 5I for full information.

STANDARD VARNISH WORKS

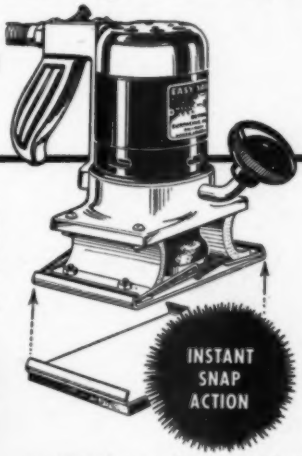
Engineers of Product Finishes

2600 RICHMOND TERRACE
STATEN ISLAND, N. Y.

2600 FEDERAL STREET
CHICAGO, ILLINOIS

Cut Finishing Costs up to 80%

WITH THE *Easy* RECIPROCATING ELECTRIC SANDER



EASE OF OPERATION: With the "EASY" Sander even the most inexperienced workers turn out more and better work than two or three hand operators. Sanding, rubbing, polishing, scuffing, "feather-edging", de-burring—wood, metal, plastic, alloy die stock, surfacer material, etc.

FILLER (PLASTER) COAT: The "EASY" produces a smooth, flat surface without abrasive marks or gouges.

NO SWIRLS: The fast, straight-line, reciprocating action duplicates the back-and-forth motion of hand block work. Impossible to gouge, cut laps, or abrasive swirls. Sanding pads of correct type to fit the job assure maximum efficiency on flat or CURVED surfaces, WET or dry work.

WOOD FINISHING: Proven indispensable for every wood job. From white wood through rubbing of final finish.

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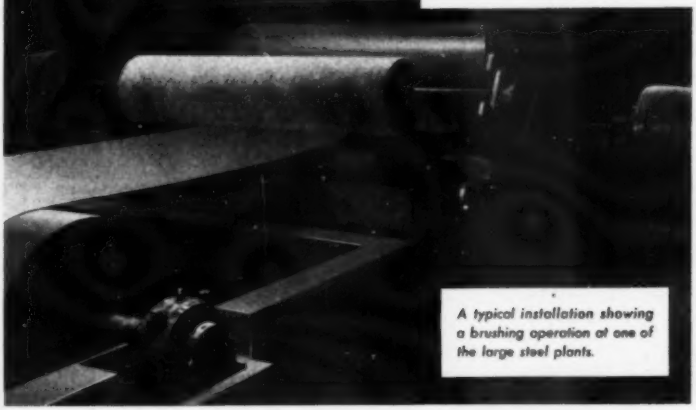

A typical installation showing a brushing operation at one of the large steel plants.

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One of Boeing's Aircraft

THE PROTECTIVE coating and finishing department of the Renton division of Boeing Aircraft Co., is not an orphan although the manufacturing program it was designed for is. Originally the factory was built for the express purpose of constructing the Boeing Sea Ranger, a twin-engined flying boat of advanced design for the Navy. The history of this vast plant is interesting and has a direct bearing on the type of finishing work formerly done and what is being done here at the present time.

In the mixing room where fresh paint materials are prepared and from which the paint is piped to spray stations in the finishing department.

BY AL JACOBSON

Manufacture of the Sea Ranger necessitated an amphibious airport and for this reason the factory site selected was near Renton, Washington, on the shores of Lake Washington.

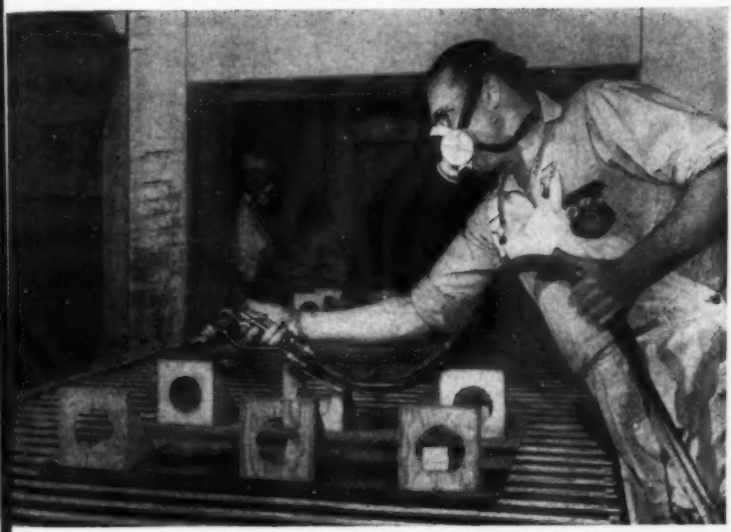
Facilities Planned for Production of Sea Ranger

The plant was equipped to produce aircraft in large quantities, involving mass production from the fabrication of parts to the final assembly of the plane, and the protective coating department was to be as advanced in facilities as the Sea Ranger was in design. Equipment was to be especially extensive, since the painting of naval aircraft requires more emphasis on protective coatings than does land-based planes, due to its service in proximity to salt water.

The finishing department, as originally laid out, boasted of some features comparatively new to the aviation industry. The shop was divided into three sections. One was for the painting of parts. It included a modern crossbar conveyor 352-ft. long which, when installed, was reported to be the longest of its type in any painting department. During an 8-hour shift it often carried more than 30,000 average-sized parts and small assemblies.

As the parts moved past spray stations they were sprayed with color from both sides of the conveyor. Further along they passed under a 14-ft. bank of infra-red lights that quickly dried the coat of paint. Passing the lights the

Finishing Departments



The spray operators work on both sides of this big crossbar conveyor.

parts moved under two cooling fans, after which they were turned over to expose their unpainted surfaces. From then on the process was repeated as the conveyor moved along the remainder of its length.

Crossbar Conveyor Carries Parts and Sub-Assemblies

On their return trip the steel crossbars of the conveyor passed through a heated caustic solution which stripped off any paint that clung to them. Rinsing and drying followed, so that when new work was placed on the conveyor the crossbars were always clean and dry, which is really desirable.

In this same section of the shop, at convenient locations, paint was on tap continuously. Workers simply plugged in a hose to the pipe line connection and turned a faucet. Paint supply lines originated in the mixing room where nine 75-gallon power-mixing tanks were filled with material received in drums. Five different colors were circulated through the pipe lines day and night. Each pipe line was 450-ft. long, extending underground into the shop, circulating around and back to the mixing tanks.

Another section of the finishing department consisted of the camouflage building where finished aircraft received a coating of paint for protection and concealment purposes. *(Cont. on next page)*

Conversion to Production of B-29 Superforts

Production plans were abruptly changed in 1942 when the Navy suddenly switched emphasis to land-based bombers and asked the Army for delivery of Flying Fortresses. The Army Air Force was unable to supply the Navy with the big 4-engined Forts, but offered to "trade" North America's B-25 twin-engine bomber facilities for the Navy's Boeing-Renton factory. The Navy agreed, leaving the Sea Ranger an orphan. After the "trade" the Army decided to make the plant a part of its vast B-29 Superfortress building program.

One of the first steps taken was to carve a large modern airfield out of rough countryside near Renton. Today this airfield is unique among take-off fields because of its double-purpose facilities. Not only does it have service trucks, but a boat cruises the lake, keeping in touch with the tower and incoming planes by radio.

Naturally this conversion from Navy flying boats to Army land-based bombers affected the finishing department. Some of the facilities that were so essential to the mass production of the Sea Ranger were not needed in the finishing of B-29 Superfortresses.

Also, while the Renton plant was originally intended to fabricate all parts and do the final assembly work for the flying boats, its role in the huge Superfortress building program called for final assembly work only. Important as that work is, the effect of the changes is particularly noticeable in the finishing department.

The camouflage building is no longer a part of the paint shop since it has been discovered that the natural aluminum skin of the

Following spray-painting the parts, still on the crossbar conveyor on which they were painted, pass under a bank of infra-red drying lamps.

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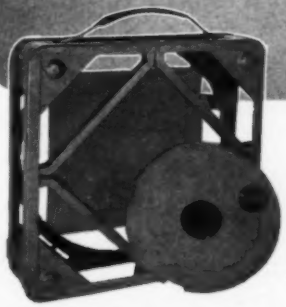

AN anti-tank or anti-personnel mine may lie dormant in the earth for months . . . ready . . . waiting for the unwary to set it off! But *not* waiting all this time is rust—the silent, relentless saboteur of metal.

The best defense against corrosion is paint. But every mine and its crate must be thoroughly cleaned and surface-conditioned before it is painted.

This is only one of the vital jobs performed by *time-saving* Oakite materials and *thorough, effective* Oakite methods. In addition, Oakite cleaning helps obtain the required adhesion of protective paint coatings, helps meet rigid Army inspection standards on these and many other urgently needed items.

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Our Technical Service Representative is freely available at all times for consultation wherever cleaning and related operations on war supply items are concerned. His personal help and advice involve no obligation.

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OAKITE MATERIALS, METHODS, SERVICE — Buy Bonds for Victory — **CLEANING** FOR EVERY CLEANING REQUIREMENT

B-29 Superfortress is as effective for concealment purposes as a coating of camouflage paint. In addition, the absence of the outside paint coating means a saving of weight on the outer skin of each plane, and it serves to eliminate some of the surface "drag" as the plane flies through the air.

The only paint used on the exterior surfaces of the B-29s is for the purpose of covering glare points—small sections of the outer skin that are quick to reflect light; for covering gas-tank areas to reduce the chances of an explosion due to enemy bullets striking the surfaces; and what is necessary for the application of insignia.

Type of Aircraft Painting Now Performed at Renton

While the type of work performed in the Renton finishing department has changed radically with the conversion to Superfortress construction, and although much of the former equipment is idle, the shop is far from being inactive.

In addition to its big Seattle organization, the Boeing Aircraft Co. has eight branch plants in the state of Washington and among them they manage to miss a number of parts and sub-assemblies which have to be prime-coated when they reach Renton. Also there are wing spars, walkways and various assemblies installed in the final assembly area which have to be "touched up."

Another function of the department is that of working with the photo template layout unit in the production of decalcomania transfers. No less than 2700 of these decals are installed in, on and around each of the huge super bombers. The majority of these are on the inside of the plane and consist of diagrams and instructions on procedures to be followed in operating the plane—the "do's" and "don'ts" for pilot, co-pilot, bombardier, flight engineer, radio operator and navigator. This large number of decals, made by the silk-screen process, has taken up a considerable amount of the space formerly occupied by facilities originally planned for the orphaned Sea Ranger, therefore the finishing department at Renton is still mighty important in the building of Jap-smashing Superforts.

Preheating Drums Before Painting

INFRA-RED drying of painted or enameled metal goods is routine procedure in many plants, but use of the "hot lights" for preparation of the material for the spray booth may perhaps be new to many metal finishers. In one plant designed especially to clean, strip and reenamel 55-gallon steel drums used for petroleum products, most of the rejects—drums which failed to get past the eagle eye of the QM or AAF inspector at the shipping bay end of the conveyor—were sent back for refinishing because of spotty coverage or bare areas on an otherwise well coated job.

Close check of the various operational steps brought out the fact that the rejected drums were, almost without exception, those which had been shunted aside for some reason or other, and which had cooled to atmospheric temperature before reaching the spray station. The first drums coming through after a lunch period or shift change, for instance, nearly always carried a high percentage of rejects. Much of this loss was temporarily eliminated by staggering the time for stopping work in

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Although all types of Permite Paints are not currently available, we will resume full-line production at the earliest possible moment.

And we do have a complete line of Permite Industrial Finishes formulated to government specifications. Experienced Permite chemists are at your service in meeting your exact finishing needs. Quotations promptly submitted.

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The Permite Line of Industrial Fininshes includes Synthetic Enamels, Lacquers, Lacquer Enamels, Varnishes – also Government Specification Finishes.

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the various departments. In this way the paint booth completed covering all cleaned drums before the men were relieved or before they stopped to eat, and they had a stock of freshly cleaned drums just beginning to arrive at their station on the minute of their allotted time to resume work.

The staggered schedule of off time ran afoul of the "share-the-ride" plan for getting men between home and plant, as those already through work and washed up grumbled at waiting for men still on the job; and so a revised operation plan was adopted. Experimentally, the drums that had been standing were sent through the first stage of the drying lamp bank and then rerouted to the spray booth. The steel, heated to a few degrees above room temperature, took the enamel properly, with desired flow characteristics. Care was taken to see that the metal did not become hot enough to set the sprayed paint on contact, as then the object of the change would have been defeated.

A supplemental short infra-red bank was then set up just ahead of the spray booth. Drums were engaged by conveyor hooks and passed through this bank; then they were disengaged so they could be rotated under the gun; and finally they were picked up and carried out by the set of hooks next behind those on which the unit had been warmed. Passage of the steel drums through the preheating bank of drying lamps evaporated all moisture which had condensed on the clean steel surface and thus insured a dry contact area for the sprayed paint.

Although three weights of drums came into the plant (14, 16 and 18-gauge steel) contract requirements demanded their segregation by metal thicknesses. This had been done in two ways, namely by weighing the drum on a platform scale, or gauging the wall through the bung hole with an hermaphrodite caliper.

After installation of the preheating bank, with a standardized conveyor speed through the infra-red lights, it was possible to judge the gauge of a drum by contact with the outside. The amount of heat input, being constant, would warm the drums in inverse relation to the metal wall thickness. The paint booth helper quickly became able to designate the gauge of each drum and hang the proper tag on the conveyor hook as the unit went through the bank of drying lamps, thereby eliminating the additional checking operation at the conveyor take-off.—ELTON STERRETT.

Roxalin Wins Army-Navy "E"

Rear Admiral Wat. T. Cluverius of the Navy Bureau of Production Awards presented the Army-Navy "E" Award for high achievement in war production to employees of Roxalin Flexible Finishes, Inc., April 10, in ceremonies at the Masonic Temple in Elizabeth, N. J.

Lt. Col. Elliott N. Baldwin of the infantry delivered the citation for the Army, presenting "E" emblems to five employees chosen by popular vote to represent the entire plant.

Roxalin, a leading manufacturer of technical protective coatings, won the "E" for its record in producing plastic base finishes for aircraft, shipboard equipment, communications, motor transport and the electrical industry.

Rheem Research Appoints Eastern Field Engineer

Effective March 26th, Howard M. Marie will represent Rheem Research Products, Inc., Baltimore 17, Md., manufacturers and marketers of Iridite, in the Southern New Jersey, Pennsylvania, Maryland and West Virginia territory. Mr. Marie has for the past twenty years, been closely associated with the metal finishing and electro-plating industry.

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PROTECTION

that meets the need perfectly

The Husky's warm, furry coat is Nature's answer to the challenge of freezing arctic winds. And, it's the perfect answer—for this pliant mantle *gives utmost protection without physical restriction.*

We took a page right out of Mother Nature's book when we formulated our Moisture Repellent Sealer for plywood . . . made it conform perfectly to the character and needs of plywood, whether subjected to sub-zero temperatures or moisture-laden tropical heat. Sealer No. 30 gets down into the pores of the wood, and forms a moisture-proof barrier that is *impregnable yet pliant.* Stress, expansion, contraction, etc., cannot affect the seal, because it is virtually a part of the wood itself.

MOISTURE REPELLENT SEALER No. 30

provides an excellent base for the finishing coat. And, it continues to protect the wood even after the finish has deteriorated.

Sealer No. 30 has won its spurs in the toughest of all assignments—the protection of vital equipment on the far-flung fighting fronts.

Handles easily—can be sprayed, dipped or brushed, with uniformly excellent results.

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DOWN COSTS!

How a DeVilbiss Spray System in a big implement plant lowered the unit cost of plow bottoms

● Here's a wartime story that may mean a better peacetime future for many manufacturers.

The Allis-Chalmers Implement Plant at La Crosse, Wisconsin, paints plow bottoms for appearance and protection. Since only an economical coating was necessary it was thought the dipping process would be the more practical means of application.

But Allis-Chalmers wasn't satisfied that this method was giving them the most they could expect in efficiency and speed, so they called in a DeVilbiss engineer.

Then a DeVilbiss Spray System was installed with a conveyor type DeVilbiss Spray Booth. The result—more uniform finish, a substantial saving in paint consumption, faster production and consequently a lower unit cost.

This is one of many ways in which manufacturers have profited by discussing finishing operations with DeVilbiss Spray engineers.

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ANY TWO COLORS . . . ANY SIZE PATTERN VARIATION

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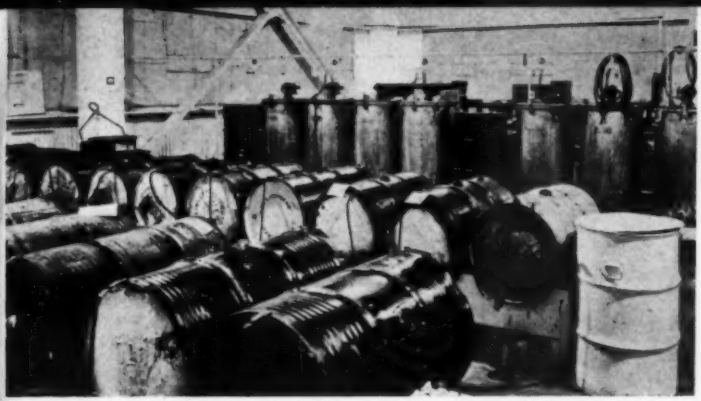


Drums of material and the mixing tanks should be in a separate room.

NOTES ON
RECEIVING
STORING
CHECKING
TESTING
PREPARING
CONTROLLING

Paint Materials

By Louis Montgomery

IN THESE days of critical shortages and uncertain deliveries it is good business sense to take care of what you have. Let us begin at the time you receive a shipment of paint and thinners. Paint material should be stored in a fireproof building which is isolated from the rest of the shop; in other words, in a building that is used only for paint and thinner storage. The storage room should be well ventilated and heated. There should not be too much variation in the heating of the room between the floor level and ceiling. Temperature should be at least 60°F. Care should be taken that the older orders of material move out of storage first.

Drums of thinner should have the same care as drums of paint, if and when possible, although I realize that in the case of large consumers this presents quite a problem due to the large storage space required. If it is not possible to store all thinners inside, enough should be taken in to insure at least a day's supply for the finishing room. All thinners and paint should be delivered to the sprayer at room temperature.

Receiving and Storing Material; Taking Samples; Keeping Records

After receiving and storing a shipment of material, samples should be taken at random from several different containers and

Viscosity is determined by noting the exact number of seconds required for a measured volume of material, at a given temperature, to pass through a small standardized opening centered in the bottom of the viscosity cup.

tried for viscosity, weight, coverage and drying time. By doing this you obtain accurate information and know what to expect from your material long before you actually begin using it.

Complete records of each batch or shipment of material should be kept. This will help you to maintain a uniform flow of material into your finishing room. At this time, an accurate check should also be made of the percentage of reduction and type of thinner the material will take.

Making Important Tests of Your Paint Materials

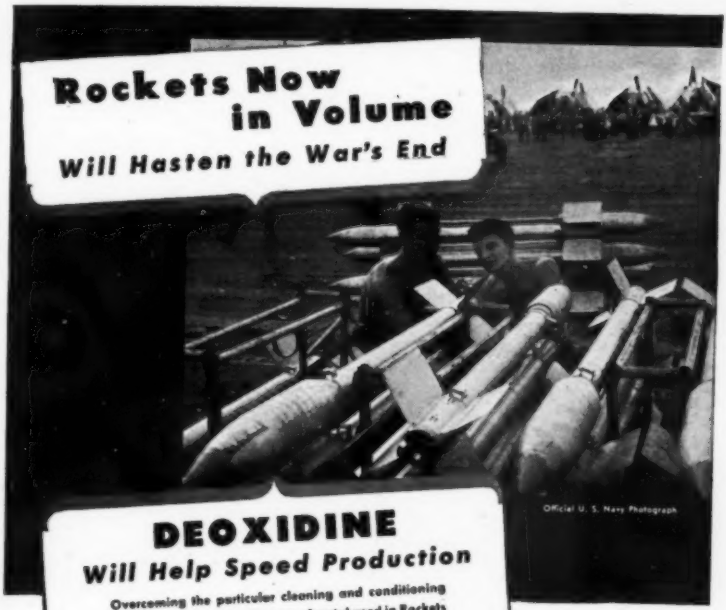
After the reduction tests, sample panels should be sprayed so you can test the paint material for its resistance to salt spray and outside exposure; also for film thickness, adhesion and whatever other tests are desirable for your particular needs. For outside exposure tests, the rack should be so constructed that the samples rest at a 45° angle and face south. There should be an adjustable shield to cover about half of the sample, thus leaving only half of the sample exposed to the elements.

There are several paint-film gauging machines on the market. These machines are small and light in weight, so you can easily take them wherever they are needed. They are accurate in determining film thickness. This is important since it is a factor that can be controlled and thereby help to keep down costs by avoiding any overloading of material on areas being painted; also it can serve as a definite check on viscosity.

Tests for Salt Spray Resistance, Flexibility and Adhesion

For salt spray testing, the testing cabinet should be made up so that the salt solution can be atomized and kept at a constant temperature of about 90°F. Of course, any degree of salt strength can be used. Our own runs to a 20% solution. To step up the action, a cross can be scratched deeply on the painted sample, thus allowing the salt spray to start its corrosive action immediately.

We also use an Olsen machine for a flexibility and adhesion test. This machine shows the pressure (in pounds) needed to break the paint film. When the sample is put in the machine and pressure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Will Help Speed Production
Overcoming the particular cleaning and conditioning problems incidental to the type of metal used in Rockets

There is a type of **DEOXIDINE** to meet cleaning and conditioning specifications for Rockets of the various sizes, ranges and destructive effects used throughout the U. S. Armed Forces.

The special difficulties which have arisen in cleaning the unusual type of rocket metal have been met and solved by ACP technicians who will be glad to advise with you and suggest the type or types of **DEOXIDINE** and process best suited to your individual needs.

PEROLINE should be used by subcontractors as their shipping oil. Peroline not only protects the parts in transit, fabrication and storage, but also has the ability to remove light rust and rusters and when the work is vapor degreased leaves the surface properly conditioned for durable paint finish.

The experience of the ACP laboratories and of ACP technicians is at your service in planning equipment and adapting our products to your particular production problems.

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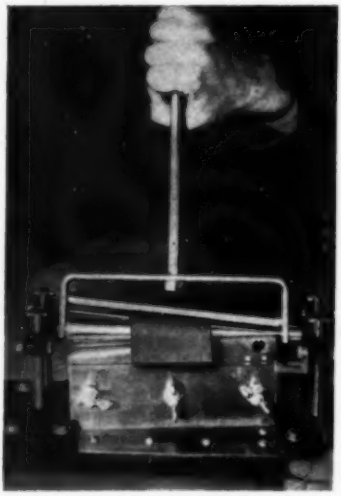
applied, a steel ball is pressed against the sample, forcing a pimple in the coated sheet metal. This, in turn, naturally stretches the paint film and eventually causes a breakdown. The varying degrees of pressure needed to produce the breakdown of the different paint films will give a comparative test.

Preparing Material Properly; Setting up Spray Pressure

The following system, although not related to paint testing, should be followed in plants not having a central control or distributing system. After the paint material has been laboratory tested and the viscosity and reduction information has been made available to the shop, a reliable man should be selected by the foreman and made responsible for the reduction and delivery of paint to the sprayers. This man should be instructed as to the importance of mixing the material, and also the "boxing" or inter-mixing of the paint so that all batches will be uniform.

Paint film thickness is determined by a device that measures the resistance this paint film offers to passage of an electric current through it.



Flexibility tests can be made by bending coated panels over a mandrel to determine the amount of bending required to cause paint film to crack.

After delivery to the spray room, the foreman should see to it that the proper air pressure is used for spraying. If this is not done, you will have variations in the film thickness on your painted surfaces. Often each sprayer has his own personal opinion as to what air pressure should be used, therefore it is important to have a predetermined standard pressure set on both the air line and pressure tank.

Under this system, you not only keep costs down and quality up, but you eliminate a great fire hazard—a big bugaboo in any paint shop. By making one man responsible for the mixing and preparation of the paint, you eliminate the necessity of having extra containers of paint and thinners at each spray station. This does away with an unsightly condition which is so common in many paint shops. Then, too, you will find that it will pay to partition off a small fire-

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Many have learned through the school of experience that the use of PREP products is important in getting the best results in cleaning and preparing metal for paint. It means better adhesion and permanence of the finish. Prep Products are widely recognized as superior. Concentrate on them for present purposes and postwar use.

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Adhesion to metal is checked by looking through a magnifying glass at the bent portion of a finishing panel, to detect cracking or peeling.

proof room for the purpose of mixing paints and thinners. Then, in case of fire, this room can be kept isolated.

Proper Care of Equipment Is Essential Too

Too much emphasis cannot be placed on the care of spray equipment. I believe that at least 90% of the paint shop troubles are traceable to dirty equipment. Each sprayer should be held responsible for his outfit, that is especially the pressure tank, hose and gun. He should be discouraged from taking the gun apart except when this is absolutely necessary.

At the end of each shift, the pressure tank and insert bucket should be thoroughly cleaned inside and out. Then a suitable thinner should be run through the hose and gun to flush them clean. When it is certain that the inside of the hose and gun are clean, the gun should be disconnected and air should be blown through the hose, making sure that it is dry and clear of thinners. Another point to remember, is that spray operators should not hang their hose over anything sharp, angular or small in diameter. The best procedure is to carefully coil the hose and lay it on a flat surface.

The next step is to clean the outside surface of the spray gun. This is best accomplished with the aid of a stiff brush and thinners. The gun should never be allowed to remain in solvents over night. After the gun has been dried, a limited amount of light oil should be applied to the fluid packing, air spring and trigger controls.

Photographs showing testing of finishes, as pictured in this article, were supplied through courtesy of Reliance Varnish Co., Louisville, Ky.—Editor.

Dr. A. E. Gessler Elected a V.P. of Interchemical

Interchemical Corp., 350 Fifth Ave., New York 1, N. Y., announces that at a special meeting of the Board of Directors held on March 19, 1945, Dr. A. E. Gessler was elected a Vice President of the Corporation.

In 1934 Dr. Gessler was appointed Director of Research for the newly formed Research Laboratories of Interchemical Corp. The expanding activities of this corporation and its subsidiaries in the widely varied field of chemical coatings are furthered by the Product Development Laboratories of its operating units and are coordinated and directed by the Research Laboratories. These Laboratories, which occupy a 7-story building in New York City and are equipped with the most modern facilities for extensive and fundamental research, have grown in size and importance with the increased volume and variety of the corporation's activities.

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Du-Lite Chemifinishes may be the answer to a finishing problem in your plant or for your postwar planning.

DU-LITE CHEMICAL CORP.
MIDDLETOWN, CONNECTICUT

SOME VITAL POINTS TO CONSIDER WHEN

Choosing a Spray Gun

Consider your spray operator first. Get a gun that fits his hand comfortably, has proper "balance", can be hung up and taken off its hanger quickly, has easy positive adjustments.

BY W. BEACHAM

BE AS PARTICULAR and discriminating when you choose a new spray gun as you are when you buy a suit of clothes. Don't forget that your spray operator will have to use that gun eight hours a day, so be sure that it fits his hand comfortably. This statement is not quite as crazy as it may seem. Spray guns, of course, are made to sell. Some are finished in black or deep red; others are in bright chrome, while still others have a plain metal finish.

We all like to see and use a nice looking gun but . . . . it doesn't take long before that beautiful finish is covered with a thin film of paint and solvent, so I suggest passing over the finish for the moment, and put greater emphasis on the operator's requirements. Before deciding upon any specified brand, let the operator handle several makes. Don't bother him with the price of the different guns; just let him take hold of each one and pull back the trigger and pretend to spray. If he cannot spray without bending his wrist, your production will be poor because his arm will tire after a short time.

Angle of Gun Handle Is Quite Important

Some spray guns are built so that a center line through the nozzle is at or close to a 90° angle with a center line through the handle. A gun of this design would be all right for small work resting on a turntable below the operator's waist line, but it is not suitable for work that requires movement of the arm or wrist. Other guns with an angle of, say about 105°, do not require that unnatural bend of the operator's wrist to point and hold them properly. As a result you get more production because the operator is not tiring himself out so quickly.

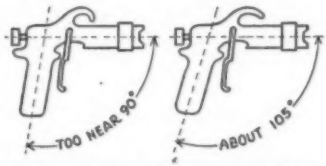

Fig. 1—These quick memory sketches are only intended to call attention to the approximate angle between center lines of handle and barrel of gun. If the work is all below the sprayer's waist line, he could probably use a gun like the one at left; otherwise the gun with a handle angled more like the one at right will be more comfortable and less tiring for continuous spraying.

Here is an important detail to consider: Can the operator hang up the gun without first looking at the hanger on which he intends to hang the gun? The hook on the gun should be so designed that the operator can, without fear of drop-

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ping the gun on the floor, hang it up securely and safely while still keeping his eyes on his work.

Design of the Hook for Quick Easy Handling

Referring to Fig. 2, is there ample room between points A and B, so the gun can be hung up and removed from its hanger with an easy, quick streamlined movement? Notice the design shown at the right. Most operators prefer something like this rather than the one at the left. True, this is a small detail but it becomes important to a fast, skillful operator. It makes a difference in his mental attitude, too. He soon gets so he can hang it up and take it down without looking.

Now look at the hook shown at the left. Less space between points A and B, and almost a closed circular loop. There is not enough space between points A and B to allow the operator to hang up the gun without looking at what he is doing. Also, the hook is too pronounced, making it necessary to look at the gun when taking it from its hanger. The gun must be lifted first and then carefully pulled off the hanger. When an operator is forced to look at the hanger, lift the gun and wiggle it off the hanger, he subconsciously becomes a little annoyed, which doesn't help on any production line. The necessity of repeatedly taking his eyes off his work is tiring because it is necessary to refocus his eyes every time he turns around.

Needle of Spray Gun; What to Consider Here

Next thing to investigate is the needle. Try to remove the needle, as though for cleaning, and then replace it. How long does it take to push the spring in and screw the adjusting nut into place? If the spring is too long or too strong, the operator may be fighting the darn thing for minutes, only to cross the threads of the adjusting nut and perhaps put the gun out of commission. When he has the nut in place, notice about how many threads are holding when the trigger is pulled all the way back. If only one or two threads

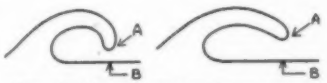

Fig. 2—More sketches from memory—the hook of a spray gun. If the gun is to remain hung up most of the time the hook at left is perhaps better. But if it is to be used in fast production by a rapidly moving skillful operator, the hook at the right will allow him to hang it and remove it quickly and easily without jiggling it or looking at the hanger.

are holding, there is a great possibility that the nut will work itself off. The nut and spring may fly off into some corner, and the air will be blue with blasphemy.

The needle itself I have covered in other articles in the past and, if you are really interested, you can dig out your back copies of INDUSTRIAL FINISHING, which will also help to refresh your mind on other important items too.

"Balance" of Spray Gun; Handle and Trigger

The "balance" of the spray gun is highly important. Hold the gun loosely in your hand. If the nozzle is heavy, remember that you or your operator has to hold it up, and how heavy that gun can become as the minutes tick by.

On the handle there are usually two rests, one for between the thumb and forefinger and one for the third finger. The gun should rest evenly at these two points,

A ZAPON WAR DRAMA IN THREE ACTS . . .

ACT 1: Vitally needed flash primer production for shells hobbled by old-time production method. Holes, through which powder charge is set off, had to be sealed against moisture with pitch by mussy hand method.

ACT 2: Zapon laboratories develop new Purple Sealing Lacquer which can be applied by production machines.

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This is just one example of how Zapon "know how"—backed by over fifty years of experience in perfecting *better* finishes—has helped to save vital man hours and increase production of war supplies. It's why, too, Zapon's war job must come first. But after Victory this same knowledge and experience will again be yours to command in the solving of *your* finish problems.

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especially the "rest" for the third finger. If it is too low, a beautiful blister will appear in no time at all, and it will also press upon the knuckle bone. I know a few designers of well-known spray guns and they all have, for some reason or other, big paws so they design the guns to fit their hands, not taking into consideration the fact that many other people may have smaller hands. Only way to cure this is to point it out to your supplier or salesman and let him squawk for you.

Let us assume that now you have the gun you like in your hand; its "balance" is right and you have a nice steady pull on the trigger. Pull the trigger all the way back. Do it over and over again and try to pinch the fleshy part of your fingers between the trigger and the gun handle. If you are successful in pinching yourself, have your first aid department order a fresh supply of bandages—or return the gun to your supplier with the explanation that you are unable to use his spray gun due to a safety drive in operation in your plant.

You now have the perfect spray gun, after making all of these tests. Now all you have to do is train someone to keep it clean, hang it up, and not throw it on the floor; spray with it and attend to a few other purely "unimportant" details.

Cleaning Paint From Air Holes in Nozzle

But wait one moment! There is another very important point to keep in mind about the air nozzle of any spray gun. Those small holes drilled in the nozzle are for the purpose of directing the atomizing air to give the desired results. If one of those small holes is damaged, an imperfect spray results.

There are times when the nozzle will build up with paint and, when cleaning it, some paint may fill these holes. It is not an uncommon practice for operators to use a small piece of wire to clean these holes. I cannot emphasize too strongly the damage that can be caused by this use of wire. The majority of nozzles are made of brass and a small scratch or nick on the edges of these holes will change the air stream, causing, as I said before, an imperfect spray. The spray gun nozzle should never be cleaned with wire. If paint has hardened to such as extent that your cleaning brush and solvent will not remove it, use a wooden toothpick to poke out the air holes, but never use anything harder than a wooden toothpick.

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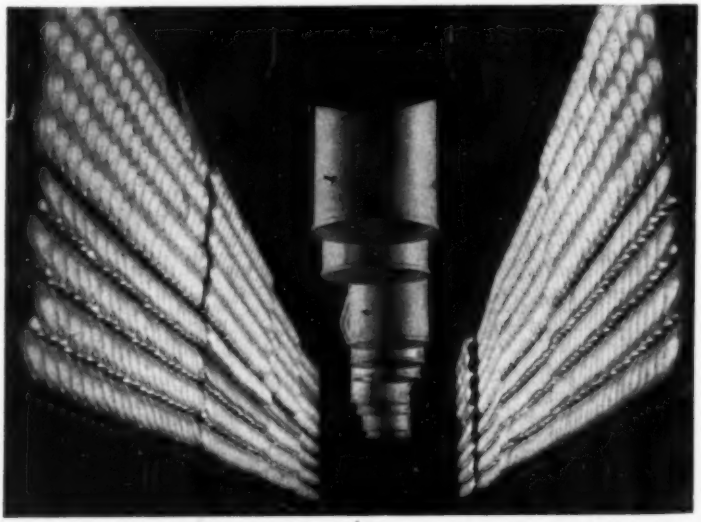
Paint-Drying Setup; Infra-Red Tunnel

A BATTERY of 1368 infra-red lamps is helping speed the production of electric transformers needed for defense by doing what was formerly considered an hour's job, in eight minutes. The electric drying lamps dry transformer tanks from six to eight times as fast as the former method, according to H. V. Putman, manager of the Westinghouse transformer division, Sharon, Penna.

Westinghouse has increased its production of distribution transformers 65% in the last year, and at present nearly 50% of the output is being supplied to the Army and Navy and to industrial plants engaged in national defense production. These small transformers are an important link in the production of light and power for air fields, munitions plants, naval bases, shipyards, fortifications, cantonments and Panama Canal.

In the painting process, the transformer tanks are hung by hooks from an endless conveyor chain. Traveling at 4-ft. a minute, the tanks first pass a spray-painting station where they are painted inside and outside. Then the tanks take their 8-minute ride between the two banks of drying lamps where infra-red radiation dries the paint by raising its temperature quickly to about 300° F. Each bank of lamps is about 4-ft. high and 32-ft. long. They consume a total of 342-kw.

The present installation dries only the base coat of paint. But more lamps and special machinery



The infra-red drying portion of a modern conveyorized spray-painting and drying setup in one of the plants of Westinghouse Electric & Manufacturing Co. Transformer tanks, hanging from an overhead chain conveyor, pass between banks of infra-red drying lamps where the paint coating is quickly dried.

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are being installed to make it possible to spray and dry both base and finish coats in one continuous 25-minute operation. To make this possible, a cooling chamber is being installed to bring the temperature of the tanks down to about 150° F. after they emerge from the first drying. Such cooling will prevent "blistering" of the finish coat when it is sprayed on.

The infra-red lamps are 250-watt units combining both lamp and reflector in a single hermetically-sealed bulb. They produce a narrow, concentrated beam of radiant heat energy, with less than 5% of their total energy emitted as visible light.

Infra-red radiation is a form of heat that travels in a straight line through air or space. Therefore, most of the heat from the lamps goes directly into the paint, causing it to dry rapidly. The principle on which these lamps do their heating and drying job is as old as the sun itself. The sun emits invisible infra-red heat rays that travel more than 90 million miles through sub-zero space, yet produce warmth on the earth to make it habitable. Approximately 50% of the sun's energy is comprised of such rays by the time it reaches the earth. Westinghouse engineers have simply built a lamp that produces these heat rays in great proportion to their light rays.—W.E.S.

Agitate Pickling Solution

IN pickling operations, greater efficiency is obtained by keeping the pickling solution at the temperature which has proved to be best for a given product and solution; and also by making sure that the temperature is uniform throughout the tank. Agitation of the solution promotes pickling action. This agitation can be produced with multiple jets of steam or compressed air or both. Of course, the ducts and nozzles used for introducing air and steaming to a pickling solution must be made of material that is inert or highly resistant to the action of the acid solution. In some equipment of this kind, reinforced tellurium-lead ducts are fitted with special non-corroding nozzles. Made up in different designs, this multiple-jet equipment will not break under either heat shock or mechanical shocks.—L. J.

Rheem Research Products Announces New Division

Rheem Research Products, Inc., 2523 Pennsylvania Ave., Baltimore 17, Md., has formed a new Marketing Division to promote and broaden the use of Iridite and to develop new product ideas.

Under the direction of Harry G. Irvin, the Marketing Division will work directly with basic industry on corrosion problems. Chief product of the company is Iridite—a corrosion-resistant finish for zinc and cadmium plated surfaces, zinc die castings and hot-dip galvanized products.

Roxalin Adds Two Men to Its Technical Staff

Roxalin Flexible Finishes, Inc., of Elizabeth, N. J., announces the recent addition of Sylvan E. Beck and John J. Oudhoff to its Technical Staff.

Sylvan E. Beck, B.S., M.S., who has written and participated in writing many widely used U. S. Army protective coatings specifications, served from 1939 to 1945 as chief chemist of the Paint and Technical Laboratory, Holabird Ordnance Depot, and subsequently Aberdeen Proving Grounds.

John J. Oudhoff was educated at the University of Illinois and until recently was head of the Organic Laboratory at Eastern Aircraft Division of General Motors Corp., Linden, N. J., where his previous experience as a consulting chemist on protective coatings was applied to aircraft finishes.

Both Beck and Oudhoff are engaged in customer service and product development in the Roxalin laboratories.

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Send us a complete description of the part or parts for which you would like our recommendations for more effective and cheaper de-burring or other finishing operations. Better yet, if possible, send us the parts. Our technical staff and laboratory will be glad to study your problem and make a complete report. If necessary, we'll send a representative to your plant.

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U.S. MARINE

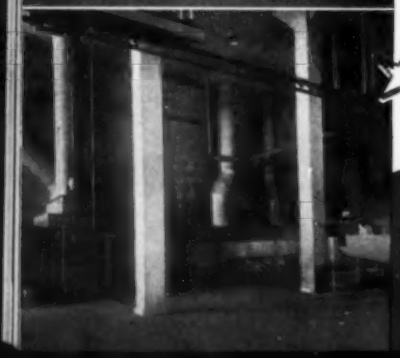
The U.S. Marine Corps Air Station at Cherry Point, North Carolina, is one of the finest in the country. It is designed from top to bottom to do a typical Marine job . . . any assignment RIGHT!

The views on these two pages show Binks equipment ranging from small waterwash spray booths to the giant installations which accommodate entire planes . . . another good example of the completeness of the Binks Service.

Every unit in this up-to-the-minute Air Station finishing department, from the paint agitators to the final exhaust fan, is part of an integrated Binks System . . . the type of equipment that will serve American peacetime industry with the same efficiency that it now helps to win the war.

ARMY E NAVY

Left: A large Binks Down-Draft Water Wash Spray Booth at Cherry Point. The fumes are exhausted through the grills in the floor for washing below. Binks Paint Circulating System is seen along the wall.



Left: A corner of the new Finishing Department showing Binks Dynaprecipitor Booth, exhaust stacks, conveyor system, etc. . . . a complete installation designed to do a big job right.

OFFICIAL U. S. MARINE CORPS PHOTOS

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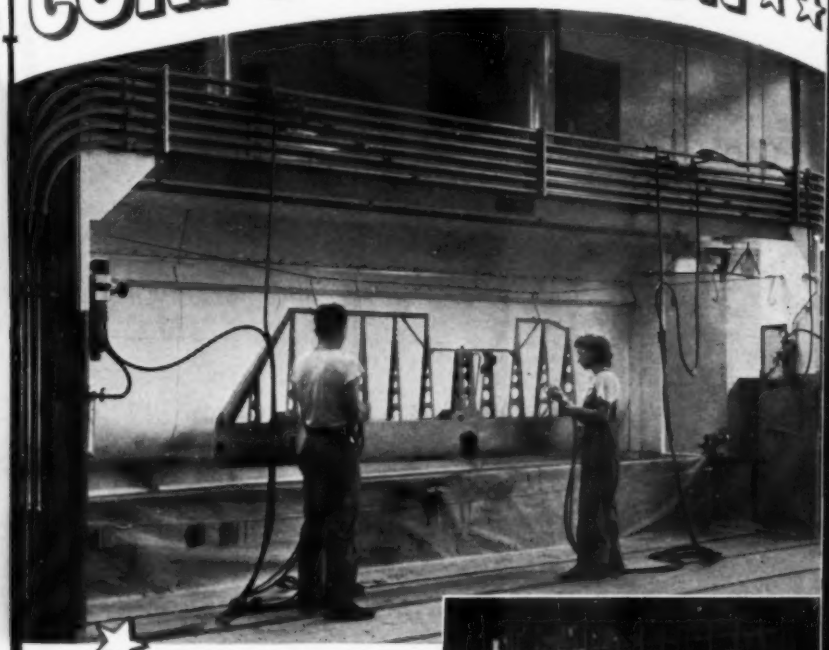

Above: A typical Binks Dynaprecipitor Wash Spray Booth. The pipes are part of a Binks Paint Circulating system which bring finishes of different colors or material to the booth from a central paint supply room. Fumes are exhausted through a water curtain which washes out fumes and finish.

Right: From this battery of mixing tanks, each with its own agitator, the finishes are piped to the spray guns under constant pressure, viscosity and color control.

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FOREMAN'S PROBLEM OF ORGANIZING FOR *Peacetime Production*

Here are a few things one finishing foreman is thinking about and some decisions he must make before and when his outfit switches from war to peacetime production.

BY RED SPARKS

WELL, HERE WE ARE on the brink of the termination of an important understanding and, like all important undertakings, the termination brings plenty of thought. Usually the thought is—*it might have been*—a reflection. In the present case, perhaps a better thought is *anticipation*. This thought is of vital concern to the finishing foreman, especially. He had better be getting his material together and laying his plans for building bridges, because he is going to have some pretty tough streams to cross.

Yes, sir, this is Red Sparks telling you that reflection had better be forgotten and some downright good earnest thought given to the future.

There is plenty to think about. Take, for instance, the personnel of the department. Go over the list of men now working for you—the men you must use to make the switch from war to peacetime production. You really must use these men because you cannot stand still and wait for the return of the good men whom you have relinquished to the Armed Forces.

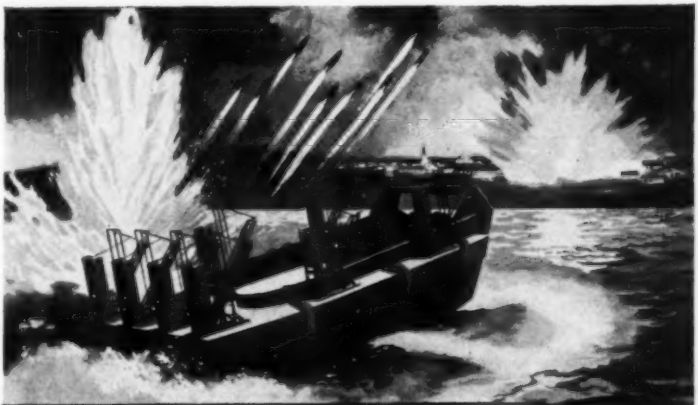
Return to peacetime production means, perhaps, a more difficult problem than the conversion to war production meant at the start of the conflict, because then you had experienced, dependable skilled men working for you.

Plenty can be done with the right kind of men to work with. So Red thought that the first thing he would do would be to take an inventory of the men he had working for him now. When he put all the data down on paper it was rather discouraging. He scratched his head as an expression of perplexity spread over his face.

Inventory of Shop Personnel; Skilled and Unskilled

"Gosh," he said, "this doesn't look very good when you have it all before you in black and white. I didn't realize the situation was so bad." Here is what he had:

Four old spray men, all past 60 years of age and mostly broken in



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The finishing system on one conveyor line rocket job is a spray coat of Berry Brothers' 3-183 Primer, air-dried five minutes—following with a spray coat of Berry Brothers' 3-67F Olive Drab, infrared baked for three and a half minutes—and concluding with a second enamel coat, infrared baked for the same length of time.

There are only two handling operations—on the conveyor and off.

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spirit and efficiency; none of them capable of first class production on peacetime work. These men seemed to have aged faster under high pressure war work than they would have under normal working conditions, and they couldn't be counted on for very much under a new setup—such a setup as the future would seem to demand.

These four men were what was left of his original group, that is, the skilled group. Of course, there were helpers and laborers of the original group still with him, but these men were also mostly old. Of this latter group, the list showed the following:

One man with heart trouble who couldn't do hard work. One man with a paralyzed right arm. One man with a crippled foot. One man with a bad case of vericose veins in his legs. Two men with hernia. Two men, each of them having but one eye. The remainder of his men were new to the finishing business, having come to him during the pressure of war work. They were working at labor jobs such as the fabrication and finishing of ordnance parts required. Mostly it was just handling parts through the department. These men had acquired no skill whatever that would fit them for work on peacetime products where fine finishes are necessary.

Workmen Once Dependable Now Changed by War Production

Red mumbled incoherent words to himself as he labored over the sheet of paper on which he had made notes. He laid his pencil down and scratched his head again, studying the words he had written. Then he took up the pencil and began writing.

There's John, he wrote. Used to be a fine workman, plenty of pep and a speedy worker. Now he is just the opposite. Never saw a man change so much in such a short time. John had become an undesirable workman. He was unreasonable. He had become an agitator and continually stirred the other men into a state of almost disloyalty. This fellow advocated slower production, loafing, stalling, and all manner of things that would tend to retard production. Red set John down as being out of the peacetime picture. Then he went on down the list checking the men who would or would not be useful to him when the time came for making decisions.

Other Working Conditions That Foremen Must Consider

At this point Red laid his pencil down again and once more scratched that carrot top of his. He leaned back in his chair, locked his hands behind his head and stared at the ceiling. I wonder, he thought, if men realize that they establish a record for themselves when they work under difficult conditions, particularly in times of stress and strain. I wonder if they know that once they have lost the respect of their foreman by their bad performance, that it is going to be extremely difficult to gain it back again. It's a little bit like the mother who said she had spent 25 years making a man out of her son, and some other woman made a darn fool out of him in 15 minutes.

That's no idle thought. Take a man you have trusted over a period of years, and then he pulls a stunt that causes you to never trust him again. He spent years building up that trust. He destroyed it by a single act that consumed maybe less than 15 minutes.

Red followed this thought by recalling that in his department there were cliques or groups of

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Eclipse Spray Equipment operates on the Low-Pressure principle, using 20 to 30 psi. less than most equipment. Materials can be applied without danger of separating solids from fluids or causing premature evaporation of solvents or vehicles.

That is why such materials as molten paraffin, thin varnish and red lead in oil can be applied without separation or solidification. This means satisfactory bonds with any material.

Eclipse can handle difficult spraying jobs easily; ordinary jobs most efficiently. Perhaps your present spraying methods are not satisfactory. To be sure, write, to Eclipse for prompt, intelligent Engineering Service. There is no obligation, of course.

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ECLIPSE

men who were continually causing trouble; jealous of each other; claiming that one group got better work than the others; even going so far as to accuse their foreman of favoritism.

However that didn't worry Red so much. It was always more or less present, only for the last three or four years it had been more prevalent. There were other things that did worry him though. It seemed that faults, which had been dormant in men previous to high pressure production methods, were now active. Apparently certain faults in men had been high pressured just like production had been. At least men didn't hesitate any more when they wanted to say or do something. They were outspoken in their demands. Men didn't make requests any more. They really made demands. Red shoved his chair down again and leaned over his paper.

The Seniority Problem Sometimes is Serious

He wrote: There's Pete; been here nearly 30 years; limited in capabilities but thinks he should have the best jobs because of his long service with the company; seniority. Pete couldn't do any job good. He was fairly industrious but careless. Inspecting his work, Red could just fairly pass it; many times he was forced to turn it down and make him do it over. Frequently he considered letting the man go but had kept him on owing to the length of his service. Seniority again.

"Bah!", Red said, "who coined that word anyway?" Of course it is all right if used right, but when a workman depends on it alone for his rights and benefits, it's all wrong. Seniority should be the deciding factor only when all other factors are equal. If a workman has worked 25 years in a factory, or any place for that matter, and hasn't fitted himself for better work and more responsibility, he has no one to blame but himself. His years of service count only for has no one to blame but himself. He is merely standing still, and his seniority would only count against another man also in the same catagory.

Certain Regulations Can Hinder Peacetime Organization

Red decided that to swing back to peacetime work meant taking drastic action. He continued to analyze the situation, which brought him up rather short, for his thoughts turned to himself. What am I going to do about it?

Hm-m-m, he mused. I darn near left myself out of it, but I'm in it good and deep too. First thing that must be done regarding myself is to have my hands untied. I must be free to perfect this peacetime organization without being hampered with this regulation and that regulation—this rule and that rule—from whatever source these rules and regulations spring. I must be free to act according to the setup of our factory and be guided by our own convictions regarding what is the best procedure to follow in laying our postwar plans.

Certainly we cannot produce if we are forced to adhere to lines laid down by some would-be know-it-all man who is entirely unfamiliar with shop practice, and yet who presumes to set up rules, regulations, prices, and so forth governing what we must do. Surely we cannot produce if the know-it-all never saw the inside of a shop and yet tells us how to run it.

Neither can we produce if we are forced to put up with the presence of a workman in the de-

... a good name to remember!

ARMY E NAVY

In the constant battle against rust and corrosion—in peacetime as in war— it will pay you to remember "Vedoc", an exceptionally fine organic finish.

Today, the makers of "Vedoc" are engaged 100% in making war paints. When peace comes, however, they will be ready with a complete line of new and improved finishes . . . for such products as washing machines, refrigerators, kitchen cabinets, other durable consumer goods.

LIQUID PLASTICS DIVISION

FERRO ENAMEL CORPORATION

CLEVELAND 5, OHIO

partment who assumes the right to do certain things that are wholly outside the realm of department management, especially if that workman is placed in the department by outside forces that are backed up by men who are high in our economic setup.

Not Going Back to Former Products, Methods, Equipment

"Yes sir," Red said, "anticipation right now is really something. It means besides the adjustments that must be made in the department, a lot of other things too. Suppose the company I work for decides not to return to manufacturing the products we made in prewar times. What if we decide not to fabricate articles of wood, but continue to make some kind of steel product? It would be the smart thing to do perhaps, because nearly all of our woodworking machines have been replaced with metal-working equipment. And in that event, I'd have to switch all of my men over from wood finishing to metal finishing—not so difficult, but the technique is different.

"True, we have all been working on metal products during the war, but the finishes have not been what peacetime buyers will demand. Then there is another aspect; that is mass production where you set up to turn out maybe a single article by the thousands. You install special "setups" to run this war product through from layout to shipment, on production lines that really do the job.

"These parts or products are all alike—same design, same shape, same finish. No change at all until the article becomes obsolete and is superceded by a similar article that has proved to be better adapted to battle conditions, and even then there is a slight delay, for the improved design starts through the production line with hardly a noticeable halt.

"Conveyor lines carry the product through the finishing department without stoppage. They come in one end and go out the other so fast that the product is packed and on its way to its destination the same day it was received.

"The industrial picture today is mass production, assembly lines, conveyor systems, etc. The trend for the future is mass production, assembly lines, conveyor systems. How to accommodate or apply this trend to custom-made articles, or to a variety of products all requiring different finishes, is part of every foreman's anticipation.

"So I say, let the finishing foreman dwell on this vital thought—*anticipation*. He will have plenty of use for any conclusions he reaches."

Noted Industrial Designer Locates in Los Angeles

Walter Dorwin Teague, lonk known as the Dean of Industrial Designers, has extended the services of his organization to the Pacific Coast. The new Teague offices are located in the Title Guarantee Building, Los Angeles. "The present expansion of the West Coast industry", says Teague, "not only can be made permanent, but can serve in addition as the basis for more intensive industrialization of this area and for all the countries facing the Pacific Ocean." It is the West's position, he says, of unquestioned leadership in the fields of light metals, aircraft construction and air transportation, and in the manufacture of kindred products, that has prompted the move to supplement the operations of the Teague New York organization.

Fellow of the American Society of Industrial Designers, Walter Dorwin Teague has been the consultant for many of America's major industries. It is probable that he has conceived the shape, line and color of more of the common articles incident to our daily lives than any other individual.

VITA-VAR FINISHES

For all your finishing problems

TODAY, Vita-Var Product Finishes protect the latest equipment of the Armed Forces.

TOMORROW, Vita-Var will supply peacetime finishes of the same high quality.

Although today we can supply your finishing requirements for the Armed Forces only—consult us *now* regarding your wartime or peacetime finishing problems.

ARMY E NAVY

Write for the Vita-Var Products Finishing Folder on metal, wood, and other finishes.

VITA-VAR CORPORATION

PAINT ENGINEERS SINCE 1888 · NEWARK, NEW JERSEY

This article, I believe, will be of interest to many of your readers who are contemplating the use of tropicalization treatment. It is merely a transcript of some of my experience in this new field—

Fungicide Coatings in War and Peace

BY FRED SIMMONS

Paint Shop Supervisor
Communications Equipment Corp.

SHE'S DOING her share for the boys over there, and by share I mean saving many lives and equipment. This entirely newcomer to the busy industrial finishing room comes at a time when it is needed the most, when vital and valuable war equipment is being shuttled to the tropical combat zones.

This fungus-resistant moisture-resistant medium, when applied to radio, radar, auto components, etc., serves to combat an enemy as real as the original Axis Trio. Heretofore the above named items have been lost—completely deteriorated in as short a time as 72 hours after being unpacked from their hermetically sealed containers. Unbelievable? But it's true.

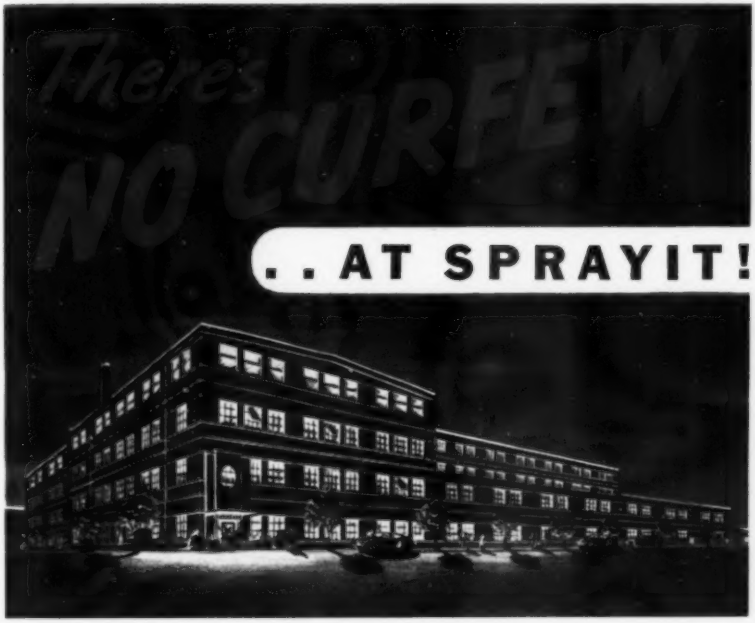
Imagine if you can, valuable radio equipment operated in foxholes in a steaming hot swampy jungle. When moisture seeps through the smallest apertures, under canvas covers and through the vital electronic and mechanical parts, then you have a haven for destructive parasites and fungus; hence the need for this valuable protection.

Thanks to our foresighted industrial geniuses, a partial cure has been found. It is the application of fungus-resistant lacquers and varnishes. This remedy, although not a complete cure, is nevertheless a great measure of insurance to manufacturers of vital war equipment that their goods will last a great deal longer and be less troublesome to the men who deserve the best we can give.

Early Objections to Fungicide Coatings by Workmen

My first experience with this medium was, to put it mildly, a distressing incident. In the first place our finishing room was at its peak of production on other radio finishing, so naturally we were not prepared for this additional work. Besides, most of us couldn't see the need of what seemed at the time the messing up of those beautiful wiring jobs with sticky varnish. My workers were greatly disturbed. "How am I to do that job when I'm trying to get this other job done?" "And I hear that stuff is poisonous." These were common complaints from workers.

(Continued on page 74)



HERE at Electric Sprayit Company, little thought has ever been given the word "Curfew." Probably because it just never seemed to fit into the SPRAYIT course of action. Since this company was first organized, much thought, tireless effort and endless hours have been devoted to developing products of unusual application that have earned a permanent place in everyday commerce. Additional products will be added to our line when future operations permit.

Today at SPRAYIT, action is just as great, machinery hums as continually, and lights are just as bright as when peak war production was first reached! There'll be no Curfew in present schedules until proper military officials say "Your job is completely finished." After that, it will be our job to build the finest products and render the best service in SPRAYIT history. In the duties of war and the business of peace, "There's no Curfew at SPRAYIT!"

Well it took a great deal of tactful maneuvering to get started with this entirely new kind of work. It has been proven that the toxic effect of using fungicidal treatment to protect war goods was grossly exaggerated beyond all common sense. However, like any other paint material, it must not be taken internally.

If the work room ventilation is adequate no harm can come to those who work with or apply fungus-resistant paint materials; and if the workers could know the good these materials contribute to the war effort, all complaints and suspicion would cease.

Lacquer and Varnish Type Materials Developed

One manufacturer I have in mind has developed an anti-fungus coating material that contains an absolutely non-toxic ingredient—thus another step forward. Many concerns manufacture this material is two forms, namely lacquer base and Bakelite resin varnish. The former, because of its elesticity, is ideal for rubber insulated wire and cable. The latter is ideal for areas that are rigid or firm.

Back of every quality paint product is careful research work and testing.

In line with my experience, Bakelite resin varnish is the most versatile medium. It contains a chemical known as "Pentachlorophenol" which is the anti-fungus element used. This chemical is harmless to most radio components. The lacquer-base material is also good for many tropicalization jobs, but has its limitations due to its chemical content, Phenyl Mercuric Salicylate, which is harmful to certain resistors, etc.

The application of fungicides to war goods is a technicality all its own, and cannot be dwelt upon in its intricate entirety here. However each item presents its own problem which must be studied closely.

Most electrical contact points require some sort of masking as the fungicide material is, in itself, an insulator. Masks may be of tape, grease, tissue or rag. Rag is handy for coils, etc., as it tucks quite nicely around these components.

When and How to Apply Fungus-Resistant Coatings

In the not too distant future I believe that manufacturers of components will, in their known enthusiasm for perfection, treat each radio part they make with a fungicide coating. A post-assembly overall spray coat to the complete chassis will tend to give a more positive protection.

In our shop, under the patient guidance of the U. S. Signal Corps., we have found that the best way to treat radio items like

To "Step Up" Sales, Wrap

WRINKLE Around Your Product!

When you "wrap" your product in WRINKLE — the one-coat finish — you automatically invest it with an eye appeal that makes for easier sales and larger volume. You'll find, too, that WRINKLE not only improves product appearance, but affords unusual product protection via its high degree of durability. And last, but not least, WRINKLE should enable you to effect a marked reduction in your finishing costs.

Billy Wrinkle says:

"WRINKLE's the answer when your product finishing problem involves sales stimulation. For proof, write for your copy of

NEW WRINKLE INC

1773 Springfield St., Dayton 3, Ohio

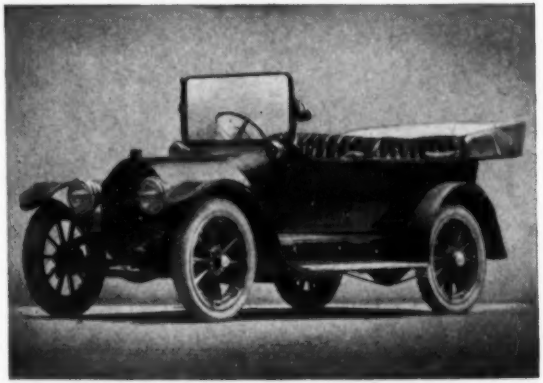
"Billy Wrinkle" and "New Wrinkle" are registered trademarks of New Wrinkle, Inc.

SEE DU PONT FIRST FOR TOMORROW'S BETTER FINISHES

For today's war products—for tomorrow's peacetime products—depend on Du Pont for better finishes. Now the Du Pont laboratories are busy solving wartime finishing problems. Out of this research and experience will come the new and better finishes that will add color—sales appeal—durability—value—to everything you make.

Right now, war needs come first. Du Pont has helped hundreds of industries break finishing bottlenecks—will be glad to help solve your wartime finishing problems.

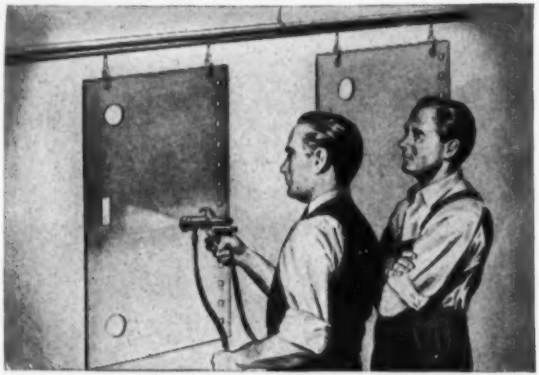
Call on us, too, if you are planning a new and better product for a brighter tomorrow—provided, of course, it doesn't interfere with the war effort.



PRIOR TO 1923, it took 21 days to apply the slow-drying finishes before this four-cylinder powerhouse was ready for market. Then Du Pont perfected DUCO, slashing costs, cutting finishing time from weeks to hours, helping to make production-line finishing possible. From the same laboratories that produced DUCO will come the better finishes for your product of tomorrow.

—provided, of course, it doesn't interfere with the war effort.

laboratories that produced DUCO will come the better finishes for your product of tomorrow.



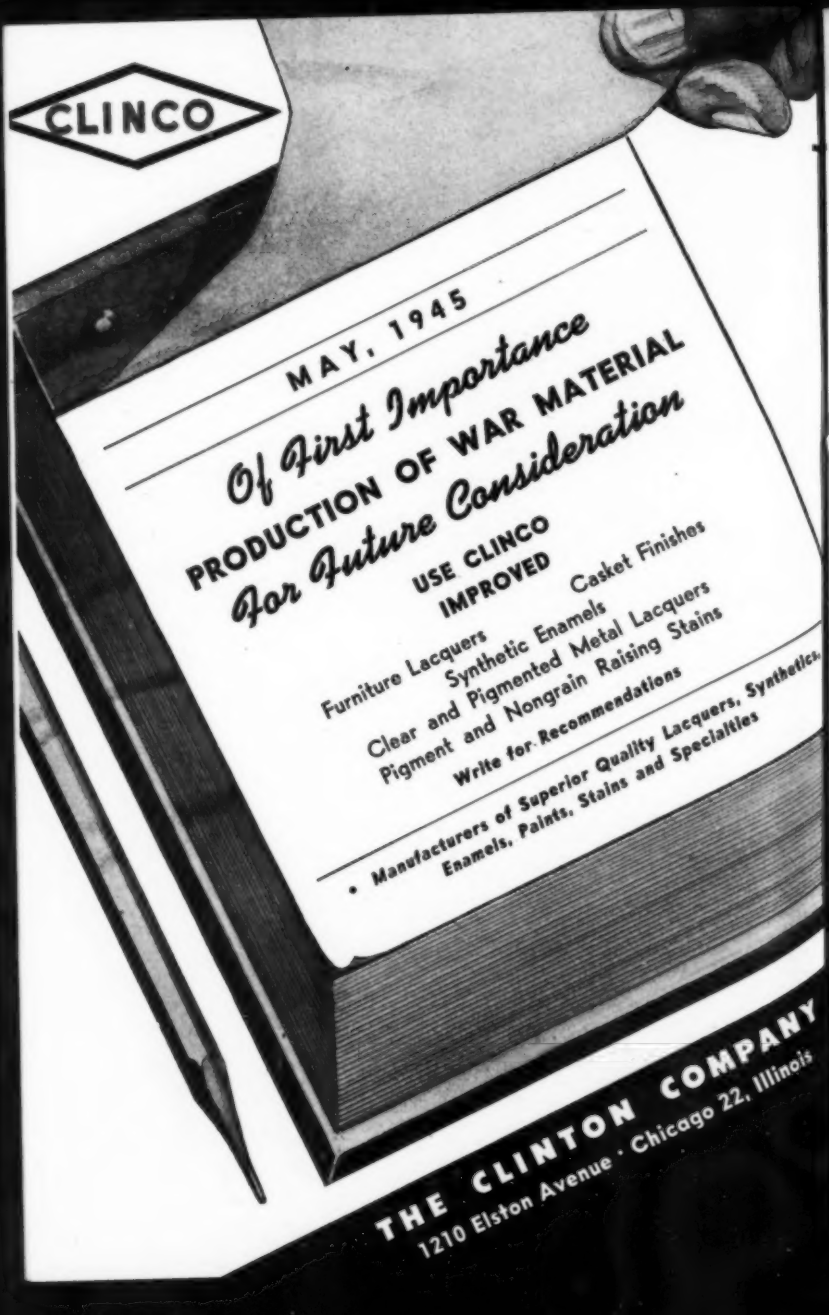
IMPROVED FINISHING TECHNIQUES—For example, a war contractor of metal panels called in a Du Pont Service Engineer when finishing costs hit 50 per cent above estimate. Spray-gun operators were instructed in new technique of applying finish. Results: Finishing materials saved, rejects minimized, costs brought within estimate. Can you use this experience today?

ENHANCING AND PROTECTING beautiful wood veneers is made-to-order for DUCO or DULUX. Furniture identified with a Du Pont DUCO or DULUX finish has sure-fire sales appeal, instant consumer recognition. Put Du Pont "know how" to work on your product by writing to: E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

DEPEND ON DU PONT FOR BETTER FINISHES

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*


CLINCO
MAY, 1945
Of First Importance
PRODUCTION OF WAR MATERIAL
For Future Consideration
USE CLINCO
IMPROVED
Furniture Lacquers
Synthetic Enamels
Casket Finishes
Clear and Pigmented Metal Lacquers
Pigment and Nongrain Raising Stains
Write for Recommendations
• Manufacturers of Superior Quality Lacquers, Synthetics, Enamels, Paints, Stains and Specialties
THE CLINTON COMPANY
1210 Elston Avenue • Chicago 22, Illinois

receivers, transmitters, oscillators, etc., is to apply the material when they are partly dismantled after their first test.

The phenolic resistor boards and choke, etc., are disconnected and left to dangle, supported only by their cable and wire connections; then, by manipulating them with a wire hook, these parts can be sprayed all over. In the disassembly, as stated previously, care must be exercised to make sure that all nuts, bolts and washers are removed from the set. These pieces of hardware, if left under wire and cable, will become sealed in, causing later short-circuiting of sets.

Although I have written at length of radio and communication treatment, this is by no means the complete field of endeavor. Indeed, tropicalization should be standard treatment of all goods destined for the tropical lands.

It has been truly said that, "It takes a war to advance man's knowledge in the industrial field." Fungicidal materials, in my opinion, will certainly have their place in the postwar world.

Devoe & Raynolds Acquires Two Large Companies

Two announcements in April gave the news that Devoe & Raynolds Co., Inc., 44th St. & First Ave., New York 17, N. Y., has acquired Beckwith-Chandler Co. of Newark, N. J., and Truscon Laboratories, Inc., of Detroit, Mich.

The presidents of the respective companies will continue in office and the company names will be retained, but each will be known as a Division of Devoe & Raynolds Co., Inc.

Devoe & Raynolds is now operated under two main divisions—the industrial division, in Louisville, Ky., and the trade sales division with headquarters in New York.

The industrial division supplies the automotive, refrigerator and furniture industries, as well as other large users of product finishes. The railroad department and marine department of the company are also operated by the industrial division.

The trade sales division handles the operation of all sales to the consuming public. It maintains a national dealer organization and a group of 60 company-owned stores, and in addition, supervises the artists' materials department; the painter and maintenance department; and the brush department.

The Beckwith-Chandler Co. was founded in 1893 and has specialized for many years in railroad and industrial product finishes. The company's plant and offices are housed in buildings of modern construction on a 13-acre tract of land in Newark, N. J. A 10-car railroad siding is advantageously located with access to all buildings.

Truscon Laboratories, pre-eminent in the field of waterproofing and damp-proofing products for concrete, steel and masonry, has in more recent years assumed leadership with its Eye Comfort Finishes for industrial plants, hotels, hospitals and institutions, based on its System of Color Harmony. The Truscon Division of Devoe & Raynolds will render the same specialized service in its field as other Devoe divisions are rendering in meeting the requirements in the Marine, Railway, Export, Industrial Finishing and Consumer's Home Painting fields.

Truscon Laboratories, now an ultra-modern plant in Detroit with 14 branch offices in the United States, had its beginnings in a cement testing laboratory. Devoe & Raynolds plans to use Truscon Laboratories as part of the Painter-Maintenance department of its Trade Sales Division.

The Beckwith-Chandler Division, on the other hand, will be the hub of Devoe's eastern industrial sales, servicing the eastern seaboard. The Jones-Dabney Co. of Louisville, Ky., which also operates a Railroad and Marine Department, will be the headquarters for western industrial sales.

Metal Finishing Service Engr. Appointed by Udylite

The Udylite Corp., 1651 E. Grand Boulevard, Detroit, Mich., announces the appointment of Arthur A. Schuenemann as Metal Finishing Service Engineer. Mr. Schuenemann was formerly with the General Electric Co. and the Harshaw Chemical Co.

Udylite also announces the appointment of W. H. Moyer as Philadelphia representative and Service Engineer operating out of Udylite's New York Office. Mr. Moyer was formerly with the Jacobs Aircraft Engine Co.

Spray Booth Fires

Some common causes of spray booth fires, where to position and how to fix the sprinkler heads, what causes spontaneous combustion fires, what to do to keep spray booths safe.

BY PETER P. WOOD

THE EDITOR, knowing that I have had considerable sales, service and engineering experience with spray equipment, asked me to comment on the following note which he received from a finishing foreman:

"Here is an idea that has worked very well in our paint department. We had three fires in 90 days, caused by spontaneous combustion, and we lost three motors and fans before we put this plan to work.

"We put two sprinkler heads in front of the baffles and two sprinkler heads in back of the baffles. Then we connected a 1-in. pipe into the exhaust pipe, with a gate valve on the outside, and a pull chain attached.

"Now, when a fire breaks out, it usually is in back of the baffles and in the fan housing. We pull the gate valve open and have the water coming down on top of the fire, and the sprinkler heads in back of the baffles get at the fire from the bottom. In this manner the fire is trapped.

"If the fire gets in front of the baffles it is advisable to take a bar and break the two sprinkler heads in front of the baffles. By using this method we made short work of any fire that occurred from then on. We passed this plan on to other firms in our district and we were complimented for it by the district fire battalion chief."

Two Propositions on Which We all Agree

Well, I feel sure that we can all agree on two highly important propositions:

1) A spray booth fire is always dangerous; it can be destructive and costly. In any event it is always undesirable.

2) Whatever practical means is or can be employed to aid effectively in preventing a spray booth fire—or to quickly and safely extinguish it, once it starts—is usually desirable and commendable.

My chief emphasis has always been on doing everything possible to prevent a fire from starting in or near the spray booth. In other words, find the possible causes—we have the experiences of others on record or in memory to help us—and then make conditions such that a fire will not start.

It seems to me that any automatic sprinkler system is a precaution in case of fire, the water damage being slightly less, in most cases, than the fire. However, I do think that sprinkler heads should be installed in all spray booths according to Underwriters' specifications.

Spray Booths That Have Provision for Sprinklers

A spray booth purchased from one of the reliable spray equipment manufacturers has holes properly placed in the roof of the booth for sprinkler heads. Also, at the front or entrance of the

Give your products the greater beauty of a WAX-O-NAMEL finish!

Trademark Reg. U. S. Pat. Off.

The patented wax-impregnated enamel

It's the truth—women buy what pleases their eye... and women control the purchase of home equipment. Any product will sell better if beautiful, and any product will be more beautiful if finished with Johnson's WAX-O-NAMEL.

By a patented process, high-quality enamel has been impregnated with wax. The result, WAX-O-NAMEL, not only gives a richer beauty, but has remarkable resistance to marring, soiling and handling . . . gives greater-than-usual protection during packing and shipping... keeps products "new-looking" while on display.

Perfected and used before the war, WAX-O-NAMEL may be used on any surface suitable for ordinary enamel ... applied and dried by any conventional method. Though not available at present due to war shortages, now is the time to write for the complete WAX-O-NAMEL story.

***JOHNSON'S WAX-O-NAMEL** is made by the makers of **JOHNSON'S WAX** . . . a name everyone knows*

S. C. JOHNSON & SON, Inc., Product Finishes Department, Racine, Wisconsin

booth, a "fire curtain" is provided to form a flat sheet of water across the face of the booth in case a fire does occur and starts one or more sprinkler heads going.

The second sprinkler head should be placed in the exhaust stack, at a point just below the room ceiling. Any Underwriter's inspector can give the proper information on this, according to the section of the United States in which you are located.

When sprinkler heads are placed in the exhaust duct and spray-booth cabinet it is important that the fuse (soft lead strip for melting at various degrees of heat) be covered so that no residue paint can build up on it and thereby change the predetermined degree of heat required to melt the fuse. Also, the temporary covering protects the surfaces of the sprinkler head from collecting paint and becoming distorted in shape. Remember, the head is shaped to distribute the water, as it comes from the orifice, over a certain area and at a specified pressure.

The best method of protecting these heads, so far as I have observed, is to crumple up a small light craft paper bag, place it over the sprinkler head and tie the bag with string at the bottom. Let a reasonable length of the loose end of bag remain instead of cutting it off. These bags will eventually become covered with paint and should be changed at regular intervals.

Find Out More About Your Fire Hazards

Investigate your possible fire hazards and determine why each one is a hazard. Find out what can be done to either eliminate it or minimize it. Give special attention to the possibility or probability of spontaneous combustion. Some people do not recognize these hazards until it is too late. There are a number of reasons why fires start from spontaneous combustion. In this article I will mention only two or three of the more common ones. This may help others to diagnose their special conditions and possible troubles.

Some Common Causes of Spontaneous Combustion

The most common cause arises from spraying two unlike materials in the same spray booth, for instance, spraying lacquer and synthetic enamel alternately, or spraying a material like a bleaching agent with either of the two materials just named. The overspray paint builds up on the various exposed areas of the booth and exhaust stack, and surface-dries in the high velocity air that is passing through the booth. Later, a different material is sprayed and it collects on the same surfaces, but covers the material previously sprayed. The process goes on and on, building up a thickness composed of thin coats of different materials.

Inside these sandwiched-in highly inflammable materials, some of which may not be thoroughly dry, it is probable that a chemical action takes place. The mass heats, which in itself could become ignited spontaneously; or from the heat the outer surface expands and breaks open from the older more cured materials underneath. When the outer surface breaks, oxygen is allowed to enter to support combustion, and a fire starts. The inflammable materials being already heated, it takes only seconds before a raging fire is going and igniting the fresher outside paint, with the fresh solvents eager to help. *(Cont'd on page 84)*

We're not magicians, but—

● Through the ingenious use of available raw materials and a single *Reliance customer has failed to receive all of the quality finishing materials necessary for full production* despite all wartime difficulties and restrictions.

Here is proof of Reliance *ability* to "*produce*" under the most difficult conditions ever imposed on industry. Our customers' post-war requirements will be met with equal initiative and resourcefulness. May we help you too?

Rely on Reliance

RELIANCE VARNISH CO., Inc.

LOCKPORT, ILL.

(See page 84)

Frequent Thorough Cleaning Removes Many Hazards

I believe the second most common cause of fires comes from spraying flat or lusterless paint that dries rapidly and collects on the surfaces of the spray booth in small dry particles. These particles continue to build up in thickness and create a very rough surface which is as inflammable as certain kinds of dust. They will ignite from any one of several causes. A static spark or any spark will ignite this highly inflammable mass. All spray booths should be electrically grounded as a precaution.

An exhaust fan, building up layers of paint at the tips of its blades until one or more of them contacts the paint on the fan housing or exhaust stack—this will start causing heat by friction. Eventually it will be sufficient to start the light solvents burning.

There are other causes, but in general they follow the pattern of those just given. To learn more about your possible fire hazards it may be necessary to call in your paint company's chemist, but in any event it all takes good straight thinking.

Most all companies have financial losses of various kinds and at times they may operate in the red, but the red ink can be overcome cheaply and easily compared to the red blaze of a fire. Fire is about the most destructive catastrophe that can overtake any industrial plant. It ruins everything from bank accounts to jobs. The old axiom, "An ounce of prevention is worth a pound of cure", surely holds good on the subject of spray booth fires.

A double-chain floor conveyor for moving dollies which carry war and commercial automotive bodies crosswise through the paint drying room, following their passage through spray painting stations. At regular intervals each conveyor chain has pusher attachments which engage the underside of the dolly and move it along. The two wheels at one end of each dolly move in a channel steel track (in foreground) while the two wheels at the other end roll along over room floor.

FAST PRODUCTION FINISHING *is yours*

WITH THE

KELLOGG-AMERICAN "25"

Model 25-B with quart container

A spray gun can make or break industrial finishing jobs. If a gun isn't just right it may upset production schedules, waste materials and necessitate costly hand work and refinishing. A gun that's *right* for applying industrial finishes—easily and quickly—is the Kellogg-American "25." Its non-tiring, natural, free-swinging balance allows full, long, arm strokes—gives smooth uniform coverage. Its perfect atomization, with precise control of spray pattern and material flow, helps avoid too wet or too heavy coats. Make your new spray guns Kellogg-American "25."

Back up your spray guns with a Kellogg-American compressor offering *quiet, vibration-free* operation and *most air per dollar.*

Brake Shoe

KELLOGG DIVISION

ROCHESTER 9, N. Y. • LOS ANGELES 6, CALIF.

Wooden Toy Finishing

BY RUFUS J. FAIRBURN

Zapon Division of Atlas Powder Co.

Here is Part 2 of some timely information about materials, methods of application, equipment, and other practical data in connection with painting wooden toys on an economical quantity production basis.

☆ ☆ ☆

SOME finishing materials skin over when they remain in the dip tank over night or during a week end. This is caused by the natural oxidation or drying of the material. Skinning can be prevented by floating a board on top of the finishing material. This board should extend to within a fraction of an inch of each side of the tank. It may have a knob or handle to facilitate removal.

If or when drips and fatty edges can be eliminated, a dip finish can be neat, clean and smooth; but it is seldom possible to eliminate these objectionable features entirely. By timing the drip so that the finish is nearly through flowing but not yet set, the clinging drops may be removed with a paint brush. If the work is racked it is possible to do this at small expense.

Another method is to reverse the flow of the finish by turning the dipped articles upside down. When the drip has stopped but the finish has not yet set, reverse the dipped pieces and let the drip flow back. This must not be done too soon or a new drip will form at the opposite end of the piece.

Racking Pieces to be Dip Coated

Proper racking has much to do with the cost of handling pieces to be dip coated. If each small piece is handled separately, dipping might cost more than spraying. A rack for holding small parts to be dipped should be reasonably large. Once it is filled, a number of parts can be dipped and drained at one time.

If the pieces to be dipped each have a hole near one end, a rack with hooks might be used. If there are no properly placed holes in each piece, a rack with sharp spikes instead of hooks, is suggested. To fill the rack, place it in position with the points of the spikes up. Then impale each piece on a spike, driving it down with a soft mallet — or use a press to drive all of them down in one movement. This will leave a small spike hole remaining in each piece, but usually this is permissable.

A large drying rack is needed in which to place the freshly dipped racks. This rack may be on wheels so that it can be readily moved aside while the finish dries. A hand-operated chain conveyor makes a convenient rack too. It needs to be long enough to assure the finish adequate drying time before the work is removed.

The *right amount* of the *right abrasive*—in a jiffy

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Countless finishing operations can be handled faster, better, with less waste with Elek-Tro-Cut Three-M-ite Cloth Utility Rolls. These tough abrasive strips have a powerful bite that brings metal surfaces to a smooth finish in double-quick time. Furnished in cut-to-width 50-yard rolls, they eliminate the waste and bother of tearing strips from full size sheets. It's the work of a second to tear off exactly the right amount of the right abrasive for any finishing job. Order these long-wearing abrasive rolls by trade name from any distributor of 3-M Products.

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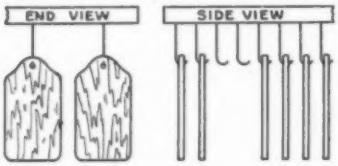
Bubbles and Blisters

Bubbles on the finished pieces are caused by entrapped air. If a bubble breaks it then becomes a crater. A partially formed bubble is a blister. They may be caused by spongy air-filled wood, or by the wood having large pores.



If there are one or more holes near one end of the pieces, they can be hung from wire hooks while being dip-coated, and while draining and drying.

When this condition is encountered, dip the work into the paint and withdraw it slowly enough to permit the bubbles to break as the piece is withdrawn. This slower withdrawal will permit a heavier deposit of paint. As the paint flows off, it will then cause the bubble craters to flow out. A slower thinner will help too.

In some cases, excessive agitation of material in the tank will fill the lacquer or varnish with air bubbles. It is important to permit them to break before resuming work. The excessive agitation might have been caused by rapid pouring of fresh lacquer into the tank, of by excessive stirring, or by too rapid dipping of work into the tank.

Slow Dip Application

If it is desired to deposit an exceptionally heavy film on the work, this may be accomplished by a slow dip operation. The lacquer or varnish should be formulated especially for this method of dipping. Then the work may be submerged and withdrawn very slowly. A mechanical means for accomplishing this is preferred to a manual operation, as this will insure a uniform rate of dipping and withdrawal speed.

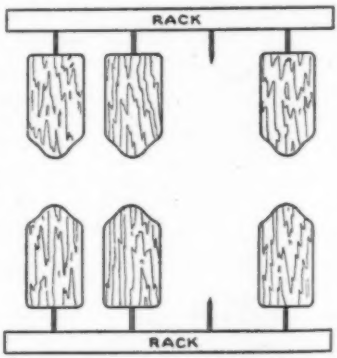
Proper Selection and Use of Spray Painting Equipment

For the highest quality finish, spray application is usually preferable. A competent operator will produce neater work. If small pieces can be sprayed on trays, this operation need not be costly.

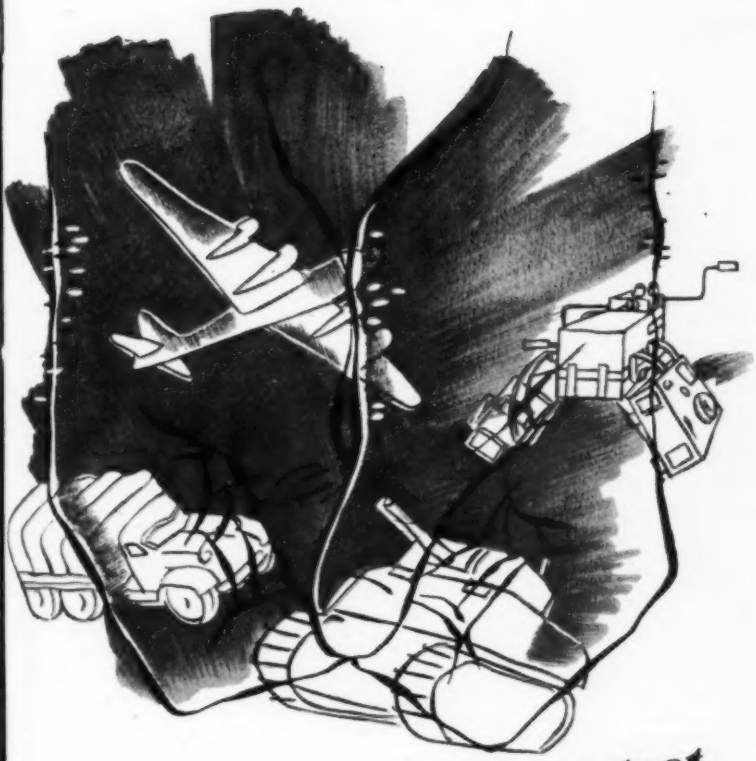
With dip work a small amount of paint is wasted on the drainboard. Some solvent is lost by evaporation while in the tank. More paint and solvent will be lost by overspray with the spray method. Usually a higher priced operator is required for spraying.

It is probably more essential to have proper equipment for spray work than any other method. As an illustration we might cite the case of Vic Harris (fictitious name).

(Continued on page 90)



One way to eliminate clinging drops of paint on dipped work is to reverse the position of the dipped articles when the flow-down of paint stops.



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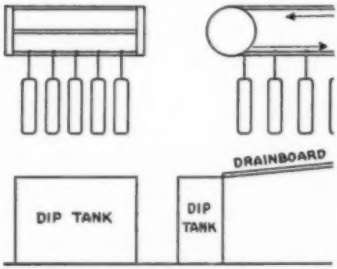
Chicago 14

Why Vic Harris' Setup Produced So Much Trouble

Vic, a toy broker, found himself the proprietor of a moderate sized toy factory. He had no real production experience but had acquired the factory through some litigation. It was necessary to continue operation to satisfy the customers with overdue orders.



Hand-dipped work can be hung to the crossbars of a double-chain conveyor and moved forward over drainboard.

All previous finishing had been by dipping. In order to obtain a proper finish on one particular item it was now necessary to do some spraying. Because of wartime restrictions, manufacturers of spray equipment could not supply him. Unfortunately this deprived him of their valuable engineering skill and experience. Accordingly he shopped for used equipment.

A spray hand solicited a job. Although equipment was not yet installed the man was hired. This man had several years experience and Vic relied on his judgment as to what equipment would be needed.

After interminable delays and with customers clamoring for goods, operations began. Trouble developed almost immediately. Then Vic did what he should have done in the beginning. He called in a paint salesman. Here is what was found.

Compressor Improperly Located; Oil and Water in Air Line

The compressor was installed in an unheated room quite some distance from the heated spray room. The air pipes had numerous right angle bends. No filter or air separator had been provided. Of course moisture condensed inside the air pipe. A certain amount of oil from the compressor mixed with it and formed sludge. This sludge was pocketed at every right angle bend and it spit out at intervals onto the work.

The air gauge was 30-ft. and two right-angle bends from the spray booth. When the gauge was set for 60-lbs. of pressure, the actual pressure at the gun was less than 30-lbs. Of course the operator did not know this.

Installation of a drain leg and an air separator at the booth remedied most of the trouble. In this instance the compressor could have been nearer the booth, with a warm air intake, thus lessening the condensation of moisture. The spray booth had no baffle plates. This caused too great an air velocity through the booth.

What I want to emphasize here is that every single item of equipment plays an important part toward finish satisfaction. It is well in all cases to consult someone who knows. There are far too many spray hands who have never learned anything but how to wave a gun. Fortunately there are many well informed ones, too.

Before we leave Vic Harris there is one more thing I want to mention. A woman was packing lacquered toys. She was taking them directly from the spray floor, nest-

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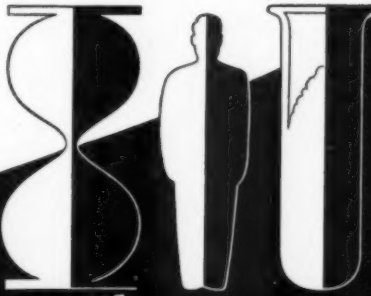
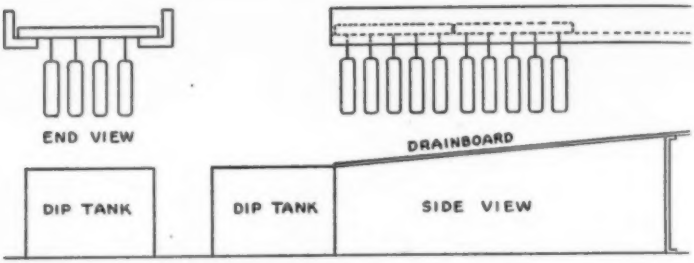


CUTS TIME, LABOR & MATERIALS, IN HALF

FUZON-O, the amazing new "Vinylite" resin base formulation which cuts cost three ways, resists oil, grease, alkali and acid . . . withstands the oxidizing effects of air and the photochemical effect of sunlight . . . is exceptionally immune to moisture, abrasion and temperature variations. Use FUZON-O on cotton, nylon and glass fabrics . . . and many other materials. For complete information about FUZON-O address the Stanley Chemical Company . . . manufacturers of Stanley Lacquers, Enamels, Synthetics and Japans . . . East Berlin, Connecticut.

*Trade Mark Carbide and Carbon Chemicals Corporation

Stanley Chemical



Showing how the rackfuls of freshly dipped pieces are supported by tracks suspended over the drainboard. Loaded racks will slide along over the track.

ing two pieces directly together and wrapping the two in paper.

Packing Lacquered Toys Too Soon After Drying

These pieces had less than an hour of air-drying. The lacquer was tack free but it was far from being dry enough for packing. This is a fault often encountered.

Unless lacquer is force-dried it should dry over night before being packed. Many people pack in less time, but to do so is to invite printing or rubbing. Varnish and paint need a much longer time than lacquer for drying.

If limited floor space makes quick packing necessary, some simple force drying facilities should be provided. A unit heater blowing warm air over the racks will help.

A room heated, probably with steam, to 100° to 125° F. is preferable. Such a room must have adequate air circulation to carry off evaporated solvents. Otherwise the drying work will be bathed in solvent vapors and remain soft.

As with dip work, small parts to be sprayed should be properly racked to facilitate rapid and easy handling. A frame covered with coarse screen wire makes an excellent tray. Place the parts as close together as possible, allowing adequate room to spray each side of each piece. Then put each trayfull in a drying rack.

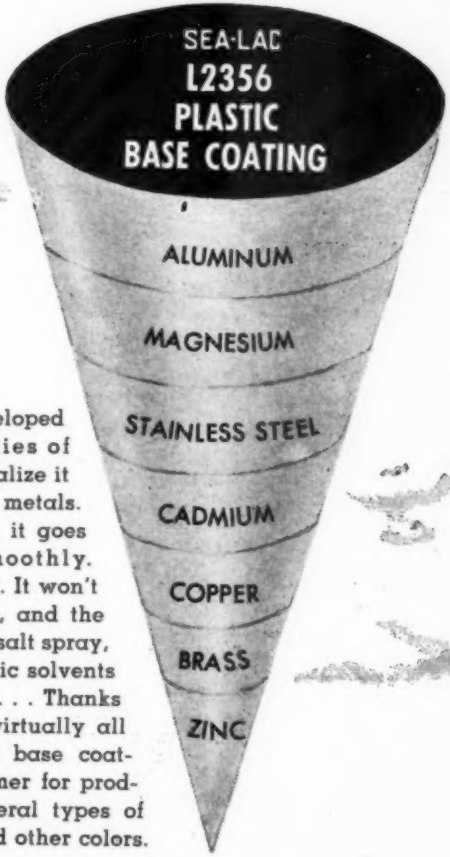
Flat pieces, after being sprayed on one side, are turned for spraying the other side without handling each piece. You simply place an empty tray on top of the dried work. Turn the two trays over; remove what had been the under tray and proceed to spray the now exposed, unfinished surfaces.

How Many Coats Depends Upon Quality and Price

In this article I have made no effort to say how many coats are needed. That depends entirely upon what price can be obtained for the finished goods.

Much of the wood now available is so poor that any number of paint coats will not produce a perfect finish. Some concerns have been able to buy short ends of very good lumber — some of it hardwood — from defense plants. They have taken a long step toward easing the burden of the finisher. *(Continued on page 94)*

MADE TO MATE WITH METALS



The specially developed adhesive properties of Sea-Lac L2356 signalize it as a must for all metals. Air-dried or baked, it goes on readily and smoothly. Once on, it stays on. It won't peel, it won't flake, and the punishing action of salt spray, humidity and organic solvents leaves it unmarred . . . Thanks to its adhesion to virtually all metals, this plastic base coating is a perfect primer for products combining several types of metals. In black and other colors.

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We can expect just so much from a single coat of lacquer or paint. Let's not try to do the impossible with it. If you want a smoothly finished surface, first see that the bare wood has been made perfectly smooth. Also, strain your paint and keep everything clean.

Consider the unit cost rather than gallon cost of your finishing material. Buy from a well established and reputable paint or lacquer manufacturer. He will be glad to help you with your finishing problems.

The Printing of Wood Finishes

PRINTING is a very annoying condition that sometimes occurs in wood finishing. It occurs mainly during storage and transit of finished wood furniture, especially in hot weather. Rarely do modern wood finishes print in service. When furniture is finished and packed for storage or shipment, frequently there is pressure of some sort at some area on the finished surface. When the customer unpacks the piece of furniture, the paper may adhere at the points of pressure. Or the surface may simply show pressure marks.

Printing is influenced by two things. The first is the composition or nature of the film-forming finishing materials. Fundamentally it is a matter of melting point. The heat-curing or thermosetting materials exemplified by the urea-alkyd type of furniture finishes show best print resistance. Next in order come the various nitrocellulose lacquers, some being much better than others.

Varnishes, as a class, are the least print proof, although the best varnishes are far better in this respect than many lacquers. The only way to select a material on the basis of print resistance is by actual test under carefully controlled conditions.

The second cause of printing is lack of proper drying. This is the origin of the vast majority of printing troubles. If the film is so thick that proper drying cannot occur in the time allotted, printing is sure to occur, especially in hot weather. Even heavy coats of lacquer may retain enough heavy solvents to print after air-drying overnight. Oxidizing materials usually improve measurably in resistance to printing up to one or two weeks after application. Usually the most satisfactory solution to printing troubles is improved drying conditions, rather than altered materials.—ROLLIN H. WAMPLER.

Dr. Charles A. Thomas Advanced by Monsanto

The Board of Directors of Monsanto Chemical Co. announce the election of Dr. Charles Allen Thomas, director of Monsanto's Central Research Laboratories at Dayton, Ohio, as a vice president of the company. Effective September 1, 1945, he will become a member of the company's Executive Committee. Since 1942, Dr. Thomas has been a member of Monsanto's Board of Directors.

Dr. Thomas will move to St. Louis and assume his new duties as vice president immediately, being succeeded at Dayton as Central Research Director by Dr. Carroll A. Hochwalt, formerly associate director of the Central Research organization.

Trade Name Decals

A colorful 4-page bulletin 8½x11-in. shows typical reproductions of attractive trade name decals and explains something about the merits of durable, easy-to-apply decals for this purpose. A free copy can be obtained by mentioning this magazine when you write for Bulletin S76, to The Palm Bros. Decalcomania Co., Cincinnati 12, Ohio.

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A Burning-in-Stix for every purpose, manufactured in 164 standard colors, plus 100 special formulae to meet the needs of manufacturers and others requiring special shades and colors. Any sample panel matched. These stix are made of finest materials and color-stains available. Color-stains are perfectly blended into pure gums, leaving no air bubbles or color specks. Size of stix larger than most. Do not hesitate to try these stix and take advantage of our matching service.

Years of research and thousands of dollars have been invested in bringing these famous brands of Burning-In-Stix to their present stage of perfection. The brands include:

Special **Lacstix** is made of the finest materials, and will not lift or shrink in or under lacquer. Is free of color specks. Made of special resins that withstand the fast solvenizing action of high powered solvents used in modern synthetic and lacquer finishes. Helps finisher repair surface in one operation.

Approx. size Porcelstix, 3½x⅝x⅜; balance of brands 7⅛x ⅝x⅜ packed 12 all one color, or assorted to package.

Special **Shelstix** is made from the choicest shellac gums and resins, and will be found far superior to many brands of shellac sticks. If you haven't tried this Finishine SHELSTIX, you will be wise to put in an order right away, to make certain that your repair work will be of the highest grade.

Special **Porcelstix** is the item you can depend upon to repair chipped porcelain, marble or tile. Does it within ten minutes. Easy to use and comes in assortment of fourteen permanent colors. Porcelstix is made from a unique combination of special resins that puts it in the high quality class. Is waterproof and will stand tremendous amount of heat.

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This process provides the up-to-date finisher with the latest scientific development for repairing all of the new types of finishes. The Lubrisol Pad-O-Paque process enables the finisher to overcome the frequent chipping and peeling so often encountered in modern finishes and the wide range of shades offered guarantee him the "perfect match."

Pad-O-Paque concentrated colors are manufactured in all standard modern shades for use on wood or metal. The high concentration of these colors permit, with the use of Lubrisol as a padding vehicle, an additional range of shades heretofore unattainable. Ask for our literature describing this nationally accepted process and for our catalogue sheet showing the complete line of Pad-O-Paques.

FINISHINE LABORATORIES, INC.
SYRACUSE 4, NEW YORK

Notes on Finishing MAHOGANY FURNITURE

AMERICAN manufacturers have copied all of the French and English 18th century styles of furniture, but recent years have seen an ever increasing popular demand for furniture that is in keeping with present day ideals of utility, comfort and beauty. Plain well made artistic furniture, which lasts indefinitely and can be easily kept in sanitary condition, lends dignity to the humblest home.

Mahogany, both solid and veneered, is available at the present time and postwar plans point to its use extensively. It is one of the most popular and important woods used in the manufacture of fine furniture. Africa, the West Indies, Central and South America, and Mexico supply the three species that make up what we generally refer to as "genuine mahogany."

Why a Finish is Used; Some of the Old Finishes

Mahognay responds most effectively to fine finishing. It is finished for four very good reasons: 1) to seal the surfaces against the entrance of moisture, 2) to facilitate cleaning, 3) to bring out the depth and luster of its beautiful grain and figure, and 4) to change or uniform its color or tone.

BY WALTER C. ANDERSON

The finest mahogany finishes are those that do the most to bring out the natural beauty and color of this strikingly attractive wood. Shellac and wax, and oil and wax —both were used extensively during the 18th century. These finishes are responsible for the mellow gleam on rare old museum pieces, and on some of our most modern pieces too. Both finishes require the expenditure of much time and skill.

Today there are vastly improved lacquer and varnish finishes suitable for finishing mahogany. Through them we are able to reproduce almost exactly the rich patina associated with traditional mahogany designs. Other finishes, based on bleaching, bring out the full beauty of mahogany grain and figure in the lighter honey wheat and amber tones which have been popularized in modern design.

In order to achieve a fine finish on mahogany, emphasis must be stressed on the preparation of the wood in its various phases, from the drykiln to the finishing room.

Most manufacturers of furniture have established their reputations by selling merchandise within

ARTISAN
Fine
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"Just as good" just doesn't go when Artisan Fine Finishes are selected to bring out the best in quality furniture. These modern finishes formulated for each specific job are designed not only to add eye-appeal and to protect, but to assure you that on your production line they will give the same consistent performance day after day. If you're interested in making fine furniture with an unmistakable quality appearance, you'll find that Artisan can do a better, more satisfying job for you.
AMERICAN-MARIETTA COMPANY
Marietta, Ohio
Chicago, Illinois
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A-M

a certain price bracket. They can not afford to drop into a lower bracket or advance to a higher price range, because their dealers would probably become suspicious.

Furniture Designer's Job;

When getting something ready for the market, the designer develops a certain design. He knows from being in a huddle with "the powers that be" that he is allowed a certain overall cost of production per piece or per suite, and he must put as much "zip" as possible in the suite for that amount. From experience he knows what thickness of lumber he is to use, and he generally knows something about the machining and cabinet work. After his designs and rods are made, the production manager takes over.

The majority of producton managers are well versed in factory methods pertaining to the drying of lumber and the various phases of operations from the drykiln to the finishing room. From there on their practical knowledge is generally very meager. The cost of manufacturing an article is split into small sums. Each department is allowed a certain amount and each foreman is expected to accomplish his part of the job for that price—and also save a few pennies, if possible. As a casual observer in many factories I have often wondered just who sets these prices. Some are under par and others are excessive. Some factory departments always save while others lose.

Finishers Quickly Find Where Others Skimped Their Work

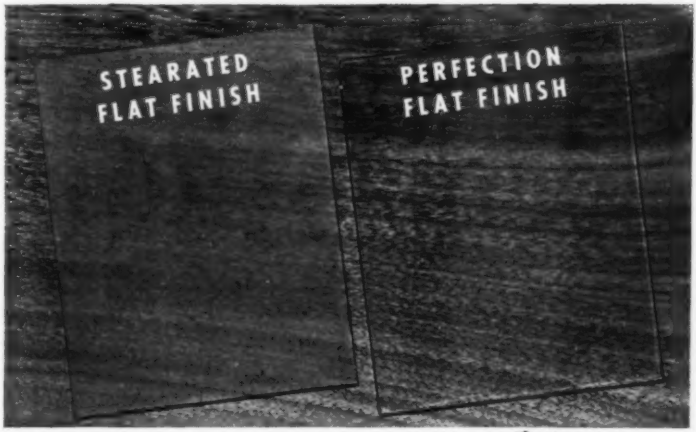
An ideal place to find out what departments have skimped on their work is in the finishing room, after the first staining operation. There you will find glue blocks loose from lack of sufficient glue. You will discover screws that were either too long or were countersunk too deeply. They cause a fracture of the veneer and leave slightly raised humps which cannot be smoothed down. Some men use soap or grease on their screws in order to drive them more easily. Oil from these soaped screws penetrates through the finish and leaves brown spots.

On solid wood too much glue is often used at joints. The excess glue is squeezed out and hardens on the surface while the wood is in the clamps. Some workmen use a chisel to remove this hardened glue and often they mar the wood by gouging into it too deeply. These deep gouges are left unsanded and when the final coat of finish is applied the marred places are very pronounced.

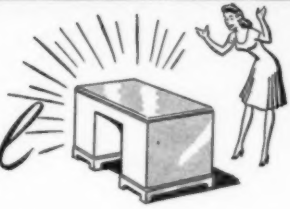
Excess glue will ooze out over veneers and will be wiped off with the finger. This spot will not take stain; it has been glue sized. From there on the repair man is kept busy fixing up unnecessarily marred places on the finished furniture. This slows up production and increases costs.

Too Many Repair Jobs in Furniture Factory

Every factory has a repairman in the finishing room, but his burdens can be lessened if the right supervision is given by the inspectors of furniture in the white. Occasionally workmen complain that their piece-work rates are too low, and to make better time they naturally skimp on their operations. A small increase in piecework rates would probably help to correct many finishing room troubles. Finishers have to do a lot of extra sanding, patching and



Clearly Beautiful—



● There's no mistaking furniture finished with PERFECTION—the *clear, transparent* flat finish. Wood grain and stain stand clearly revealed—rich, warm, beautiful. Appearance-wise and dollar-wise, furniture value is materially enhanced.

Yes, PERFECTION Flat Finish is truly unique. Product of modern synthetic chemistry, it is entirely free of beauty-masking stearates—*always clear, always transparent.*

What's more, PERFECTION is easy to apply, quick to dry—it's waterproof and liquor-proof, too. For convincing proof, try PERFECTION Flat Finish in your own plant. Write for free samples.

PERFECTION
PAINT & COLOR COMPANY
Indianapolis 2, Indiana

shading to cover up irregularities that originate in other departments of the plant.

I know of a factory making furniture of solid maple which had, at one time, seven repairmen. A new finishing foreman was employed and he set his own piecework rates. His men gradually learned to produce the quality of finishing that he wanted. Each man was taught to stop any piece going through if it needed attention as to checks, loose veneer, scratches or any of the many other ailments rampant in the finishing room. These defective pieces were promptly sent to the repair department. Repairs were made and the pieces were back into production the next day.

Stripping Off the Finish Often Causes More Trouble

When pieces are allowed to be coated and then finally rejected in the rubbing room, the washing off operation is very costly. Also, pieces that have once been washed never have the same finish restored; the coatings do not adhere as before. When varnish remover is used, many finishers follow by washing the surfaces with lacquer reducer. When recoating with lacquer they find, on many occasions, that the lacquer does not dry; wet spots remain on the surface. This is caused by paraffin in the varnish remover. Paraffin is used in paint and varnish remover to slow the drying of the remover. Unless every trace of paraffin is removed before refinishing, you may expect to have wet spots. A rag dampened in naphtha and gently wiped across the wet spots will remove the wax and allow the finish to dry. To really get away from this trouble, alcohol should be used freely after the varnish remover has been cleaned off; the alcohol wash will pick up and remove all traces of paraffin wax.

One of the most common challenges fired at a service engineer by a furniture manufacturer is: "What is wrong with the finish on our furniture? It is smoky," or "the pores are gray," or "the film is completely gray." There are many reasons for these conditions. First, lumber and veneers must be dry. From that point on, it is up to the finisher to see that all operations are carried out according to schedule and that adequate drying periods between operations are not shortened.

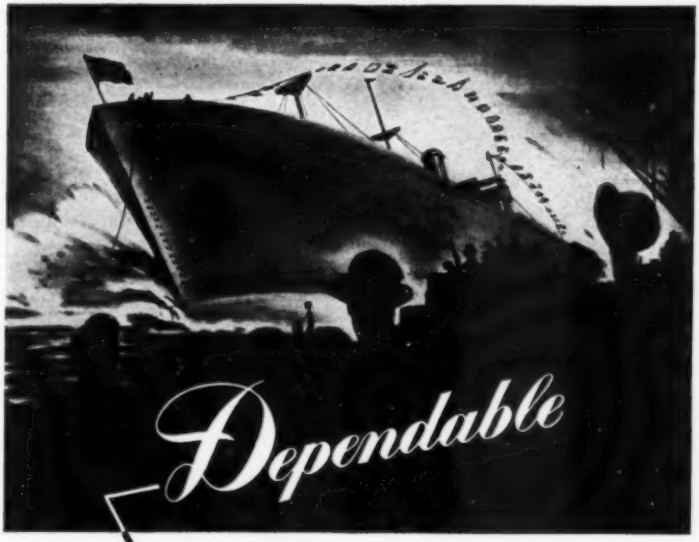
Allow Adequate Drying Time After Staining

When a non-grain-raising stain is used the stain should stand at least two hours, if air dried. I have seen washcoats applied 20 minutes after the stain had been sprayed. The surface may feel dry but the pores are still moist and trouble is sure to follow.

For washcoating, lacquer sealers are generally used. They are usually reduced in the proportion of two parts of reducer to one part of sealer. Some finishers go as high as four parts of reducer. I claim that shellac is still the best washcoat, as it leaves a better sanding surface, and the filler wipes cleaner and leaves a clearer color. Many finishers will return to shellac when the war is over.

The Filling Job and The Troubles it Can Cause

Filler is an important material, and filling is an important operation. When filler is delivered to the finishing room it requires reducing with naphtha. I have seen many fillers thrown out of solution because the men wiping filler



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would complain that it set too fast, and the man who was brushing it on would walk over to a container of boiled linseed oil, help himself to a quart, and mix it into three or four gallons of mixed filler. Too much oil will make the filler sweat.

Weather conditions must be taken into consideration when using filler. When the sultry days of summer arrive, with their high humidity, your filler dries more rapidly. In this event, use a slow naphtha, such as Varsol, to retard the drying.

Filler works best when it is moist and packs into the wood pores easily. Many times, when lacquer is sprayed over filler, the latter raises from the pores and creates a puffed effect. This is caused by an excessively dry filler absorbing the wet lacquer and swelling.

If the filler contains too much oil and if varnish is used as a top coating, grayness will appear as soon as the varnish sets. This grayness cannot be removed unless the finish is washed off. With lacquer top coats, this gray film will not show. Varnish holds the entrapped moisture, while lacquer permits it to dry out through its porous film.

Why Those Varnished Desks Turned Gray

In a desk factory, the desks were filled and stood on end on pieces of cardboard. When the varnish coat was applied, one end and the back of each desk turned completely gray. This was due to stacking the desks too closely together, and with one end on the floor where it was cold. This trouble was corrected by leaving the desks upright and far enough apart so that air could circulate between them and dry all surfaces uniformly. An overhead heating system was installed and when this started operating, fans drove the heat down to the floor and circulated it uniformly throughout the room. As a result, the filler dried completely. No more grayness occurred after that.

Many concerns do not maintain uniform temperature in the finishing room 24 hours a day. They cut off the heat at night, which is a sad mistake. Here is what you may find on solid gum parts, where an oil pigmented wiping stain is used. On turnings, where the stain is not wiped clean, rings of white will appear under the varnish.

Something to Know About Lacquer Shading Stain

Finishers generally use a lacquer shading stain over the sealer coat. It gives the shader a chance to see the areas that require touching up. Some finishers "doctor up" their shading stains, or make their own. For example, one finisher mixed an oil blending stain with lacquer shading stain. After his furniture had been out of the factory for several months it looked as if the fine roots of a tree covered the surface. The clarity of the finish was gone and you could not tell whether the finsh was mahogany or walnut.

When the furniture industry is given the go sign after the war, competent finishers will be scarce. Quality will be stressed and demanded by the furniture buyers. The final finish is what sells furniture, and what will be asked for will be well-machined, smoothly-sanded parts, expert cabinetmaking, and a finish that has depth of color and transparency. It will be well for manufacturers to bear this in mind.

Accidents and Light

IN ORDER to avoid any accident it is essential that the hazard be seen in sufficient time for proper action.

Seeing is the only one of our five senses which is dependent on some other factor. In other words, it merely requires the presence of a substance which will act as a stimulus to our other four senses in order that we may hear, touch, smell or taste that substance. However, while our eyes may be perfect, while there may be plenty of objects around to be seen, if there is no light—our sense of sight is useless.

Good lighting is an absolute necessity for accident prevention. If the man who tripped on something in the dimly lighted aisle had seen it in time to avoid the hazard, lost production time due to his broken leg would not have occurred. . . .

Industrial accidents can be reduced by the installation of good lighting. Hundreds of factories, large and small, have lighting systems wholly inadequate for safety. Inadequacy may exist in new installations.

Good lighting must be engineered to prevent eye-fatigue; to eliminate glare, both direct and reflected; to minimize shadows, and to provide see-ability for the prevention of accidents. There are a number of light sources and innumerable lighting fixtures which, properly engineered, can provide good lighting for any specific plant. It is essential that competent illuminating engineers should be consulted when changes in lighting are contemplated.

Providing good lighting on the basis of the initial installation is not enough. The lighting system must be maintained and a depreciation factor must be provided in the design of the lighting system. Otherwise, an installation which was quite satisfactory when installed may, in a comparatively few months, produce a lighting result which is only one-half, or even one-third, as much as the original. Thus, it becomes obvious that poor lighting maintenance in itself produces an accident hazard.

No matter what kind of plant you operate, no matter how few or how many workers you employ, your accident records will be better, just as your production records will be better, if you provide good lighting which results in see-ability. But always remember that you must provide that good lighting continuously.

When workers can see clearly, quickly and easily they are able to work better, faster and more safely. They are less likely to be injured at the machines they operate or by falls from hazardous obstacles.

For safety's sake—let there be light! Make sure your workers see! Remember, that light is cheap—sight is priceless!—J. L. KILPATRICK, Westinghouse E. & M. Co.

Questions and Answers

Roto-Finish

I understand that there is a process known as Roto Finish and I am writing to solicit your assistance. Do you have any information which you can give me, and can you tell me the producers of this finish?—Z. E. CORP.

Roto-Finish is a surface-smoothing operation performed by tumbling various metal parts in a rotating tumbling barrel. According to the manufacturer's literature this Roto-Finish is a proved mechanical process — a controlled rotary action of special compounds and chips that grinds, de-burrs, polishes, hones and colors steel, brass, aluminum, stainless and nickel steels. It de-burrs and smooths castings, forgings, stampings, and machined parts ranging in weight from a few ounces to 75-lbs. Produces a fine surface for plating or painting. Die and machine markings, burrs on edges, and corners are uniformly removed. Roto-Finish is recommended especially for precision parts where there must be no dimensional change, or impingements in the surface.

Both wet and dry processes are available. The dry process turns out parts clean and dry. It is well suited for smoothing die castings and brass castings after grinding; brass stampings before plating; and light gauge stampings of all metals. This process smooths the surface and edges of the parts effectively through an abrasive action. It imparts a fine bright finish at the same time, due to the coloring properties of the dry finishing compound. It is a product of The Sturgis Products Co., 400 Jacobs St., Sturgis, Mich.—ED.

Sap Stain For Red Cedar

In your February issue there is an article by Richard Blackwell about finishing aromatic red cedar —which, by the way, is worth the price of the magazine. He refers to applying a non-grain-raising sap stain to the light sap streaks in the wood. Can you tell us more about this, especially who makes such a stain, or where it can be purchased?—J. W.

A non-grain-raising sap stain for aromatic red cedar may be obtained from almost any manufacturer of non-grain-raising stains.

Or, you can make the sap stain yourself if you have concentrated non-grain-raising colors. You might mix orange or scarlet with a little blue-black or black. A little yellow also may be required. Then dilute with non-grain-raising stain solvent so that a very weak stain is obtained. Or, you may make the stain by adding some of the newer, more soluble acid dyes marketed by wood finish manufacturers directly to the non-grain-raising solvent.

The idea is to color the light sap streaks to about the same color as the red heart wood. A rather dull

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United Lacquer Mfg. Corp

General Offices, Laboratory, Factory: LINDEN, N. J.

NEW ENGLAND MFG. DIVISION, EVERETT, MASS.

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red color is required. A weak mahogany non-grain-raising stain may be entirely satisfactory.

Apply the stain carefully by spraying, cutting down the air pressure and fluid feed so that the stain comes very slowly from the gun to facilitate control. It may also be applied with a soft brush, although it is difficult to get an even job by brushing.—RICHARD BLACKWELL.

Flow Coating

We produce rapid wheel conveyors, keg trucks, industrial truck casters and similar types of conveying equipment, and are confronted with quite a finishing problem. Having heard many favorable reports on a method of applying paint called "Flo-coating," we would appreciate receiving complete detailed information regarding this process. Please send reprints of any articles which you may have on this subject. We are especially interested in learning whether or not this process can be used to apply lacquer as well as baking enamel.

We are particularly interested in comparing the cost of "flo-coating" to the cost of dip or spray methods.

If you could give us the names and addresses of any concerns in our vicinity who are using this process, it would help us greatly in setting up a system of our own. —S. R. Co.

In a letter we are sending you some articles about flow coating which were published in previous issues of INDUSTRIAL FINISHING Magazine. Also, we are suggesting names and addresses of a few individuals and concerns who may be in position to design and set up a flow-coating system for you.

Briefly the equipment you need will include a tank for your material, piping hose and nozzles through which the material must be pumped to the point where it is discharged over the surfaces of the work you are going to paint. The material is discharged through the nozzles, usually at low pressure. It is spread out in such a way as to drench or flow over every bit of the surfaces to be coated—often while the articles being painted are moving along horizontally by a conveyor.

As in dip coating, you have the flow-down and flow-off of excess material and the final clinging tear drops or fat edges that hang at the low points of each flow-coated article. Also the shape of the products must be such that no material will be trapped or pocketed; all surfaces must be free to drain off the excess paint. Your nozzles must be directed in such a way as to cover every bit of surface with paint, so there will be no skips.

Of course, there are ways to satisfactorily elminate tear drops and fatty edges from flow-coated products. The most modern equipment for this work is the electrostatic detearing equipment which has also been illustrated and described in past issues of INDUSTRIAL FINISHING Magazine.

Something that is frequently overlooked by prospective users of flow-coating equipment (which appears at first glance to be so simple, cheap and trouble free), is the fact that this discharge of the paint from nozzles and its flow-down over the work and its recirculation results in a high rate of evaporation of the volatile solvents in the paint. As a result, frequent tests and additions of solvent must be made to keep the viscosity of the paint reasonably uniform.—ED.

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QUALASOLE

Qualatone Products, Inc., 21 Gay St., New York 14

Letters from I. F. Readers

(Continued from page 4)

in one with a reciprocating motion, just back and forth, with no wiggle. —R. P. Co.

Information supplied.—ED.

Detearing; Flo-Coating

Will you kindly advise us the names of manufacturers making detearing process equipment; also flo-coating apparatus?—C. & S.

Detearing equipment is made and installed by H. J. Ransburg Co. (Electric Coating Division), Indianapolis 7, Ind.

For information about Flo-Coating, see Questions and Answers in this issue.—ED.

White Enamel on Masonite

We are interested in obtaining an excellent white enamel finish on masonite and would appreciate it very much if you could direct us, either to sources of information for obtaining this result, or send us any data or literature you might have which covers this work.—M-W.

We are sending you names and addresses of several concerns who, we believe, can supply you.—ED.

Roller Coat Finishes

We noted two letters of inquiry in your April issue, the headings of which were "Strip Steel Cleaning and Roller Coat Finish," and "Roller Coating Machines," on page 4. We manufacture roller coatings and are interested in getting the names of these people, inasmuch as we might have some roller coatings that would prove of value to them. If your policy permits, could you forward us the names of these people?—MIDLAND INDUSTRIAL FINISHES CO.

Information supplied.—ED.

To Roller Coat Mirror Backs

We are in the market for a coating machine that will enable us to roller coat paint on silvered sheet glass (shock-mirrors). We suppose that such a machine is not as yet in existence. Our idea is to transform a machine that coats by roller paint on sheet metal. We would appreciate any ideas that you may have on this subject.

Can you also send us further information regarding radiant drying for painted mirrors?—X. MIRROR WORKS.

Roller coating machines are manufactured and sold by several concerns. Names and addresses are bing sent you in a letter . . . along with names and addresses of manufacturers of infra-red drying equipment.—ED.

Finishing Glass Beads

We would appreciate getting information on various methods used in finishing small glass beads with lacquer enamel.—C. K. Co.

We suggest tumble coating, dip-whirl-coating or dipping with a wire mesh basket.—ED.

We Can Supply Them

In reference to the "Letters from Readers" department in the April issue of INDUSTRIAL FINISHING, we noted on page 4, the request for a "Bowling Alley Lacquer", and on page 104, a request for "Colored Crack Filler."

We are able to supply both of these items. . . . If you will kindly give us the names and addresses of the writers, we will gladly send them whatever data and samples are necessary.—H. BEHLEN & BRO., INC.

Information given.—ED.

Parisian Eager to Get I. F.

Now that our territory is liberated from the enemy, I hope that postal communications will soon permit normal relations between us, and that your interesting magazine will be again sent to Europe. I wish to receive all the numbers printed since May, 1940.—Jean Michiels, PARIS.

We are sending you a current copy and hope that it reaches you. We cannot supply all of the back copies you want but may have some to spare.

Wood Filler Putty

We would like to know if you can give us some information pertaining to a wood filler putty. We have been able to find a can, but the only name on the can is San-Itai-Rie filler. We would like to know if you can give us information as to the address of this

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Developers and Manufacturers of Printing and Coating Flock

company, or a similar company that makes the same type of product. We have been having a great deal of trouble with the wood filler we are using at the present time.—TABLE CO.

The manufacturer's name is G. J. Liebich Co., San-Itai-Rie Filler Div'n., 931 N. Ogden Ave., Chicago, Ill.—ED.

Black Oxide Finish; Stove Enamel

Our attention is called to your Letters from Readers in the April issue, referring to "A Black Oxide Finish and its Application to Steel Gages," which was covered by an article in your August 1943 issue, by Mr. A. F. Brooks. (The letter in April issue is on page 104.)

I note that you have sent a list of several companies manufacturing black oxide, and I wish to call your attention to the fact that we have a patent on the application of "Black Magic" to gages for visual inspection and control.

We would appreciate it if you would write your inquirer to this effect. It is covered by U. S. Patent No. 2,355,007, and we enclose a folder with a brief description.

We also would like to call your attention to "Silco" as a heat-proof coating which we believe would answer the inquiry for white stove enamel from one of your readers, appearing on page 10 of the same issue. "Silco" is not a shiny finish but, as you will note from the enclosed panel, it is a tough and very satisfactory stove finish. We suggest that you send information enclosed to the letter writer.—MITCHELL-BRADFORD CHEMICAL CO.

Postwar Radio Cabinets

We wish to thank you for the article published in March issue of your magazine (Questions and Answers), and also for the copy of the letter from Mr. Chester.

Since we wrote you a short time ago, we have had another survey made and we have also had some sample cabinets finished, based upon the latest schedule as set up.

Out of the whole deal, to be frank, we are getting a little confused and a little weaker as far as our ambitions are concerned. One thing we are certain of and that is we are going very slow on the matter of putting in a system, and under no conditions will we do this until we are sure that the steup is right.

We again want to thank you for the help you have given us, and we will keep you posted on how things develop.

The impression I get from Mr. Chester is that he knows his business and I think that if we had him on the ground we could really get some place.—X. Co.

Note by the EDITOR: When the above letter was written, the company had not yet received April issue, which also contains an informative answer to the same question.

South African Wants Catalog

Having just, by chance, picked up an old edition of INDUSTRIAL FINISHING (dated March 1944) I came across an article headed thus: "Big Catalog of Supplies for Finishers and Cabinet Workers". I am in the automobile trade and do a great deal of cabinet finishing with what I'd call "inferior" equipment. I would like to have one of those alphabetically indexed catalogs. I am writing through you, as you might be able to supply it. I really don't know whether I should write to Finishine Laboratories, Inc., Syracuse, N. Y. Kindly do your best sir, as I need a catalog like that very badly. Please advise cost of same plus postage, and money will be forwarded at once.

Before I sign off, let me compliment you on your excellent magazine. It is the best magazine I've ever laid eyes on; there is no argument about that. —E. J. ABRAHAMS.

Machine Sands Flat or Contour Surfaces

I read with interest the item, "Sand Wood Smooth Before Finishing," by L. G. Farmer in your April issue of INDUSTRIAL FINISHING.

There should be no difficulty about doing a good job of sanding on flat surfaces with drum sanders and belts —and now there is no excuse for not doing a good sanding job, no matter what the contour of the surface, with the Vonnegut brush-back sander head. In addition to sanding in the white there are also many opportunities for smoothing primer and other fundamental coats with the Vonnegut head.

We are sending you two bulletins on the subject. You will note that we are offering the sander also as an abrasive head for metal working operations.—VONNEGUT MOULDER CORP.

Reprints of Articles

I would appreciate receiving one reprint each of the recent articles, "A Film Is Born" and "Zinc Chromate Primers," by Mr. Paul O. Blackmore. —M. S.

Reprints are being sent.—Ed.

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Give you quick, easy application. Utmost durability, uniform appearance and permanency. Washable and impervious to oils and greases. Sharp and legible in any color combination.

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Materials Supplies Equipment

Rust-Proofing Oil for Coating Stored Metal

A letter from Mitchell-Bradford Chemical Co., 2446 Main St., Stratford P. O., Bridgeport, Conn., calls attention to its new rust-proofing material which is called "Witch Oil."

This is a water-displacing oil which will hold steel stampings, castings, forgings, etc., free from rust while in storage or in transit, as long as they are kept free from the direct application of water and then may be either painted or enameled without removing the oil.

This application has worked out most satisfactorily for oil filters. The filter cups were first stamped, then degreased, then dipped in Witch Oil and shipped to the assembly plant, where they were assembled and painted with no further operation. The oil remained on the interior of the filter even though a temperature of 250° F. was required for baking the enamel which was used.

Small Cabinet Ovens

A streamlined, compact and completely self-contained oven has been designed for laboratory and pilot plant use by the Industrial Oven Engineering Co., 11621 Detroit Ave., Cleveland 2, Ohio.

Sizes of oven working space in the new oven range from a 3-ft. cube to a 6-ft. cube, and special sizes are furnished to specification. Temperatures range up to 900°F., with a guaranteed differential of 2° plus or minus. This type of oven is usually furnished with electrical heating equipment, but is designed to use any type of fuel. In every case, the heating equipment is contained within the oven shell. The smaller models are shipped assembled, ready to connect to the heat source

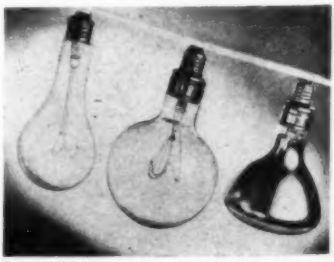
The oven is designed particularly for precision experimental work in drying, baking, polymerizing, etc., especially in cases where highly volatile solvents are used. Regardless of the inflammability or explosiveness of the solvents, the oven has insurance company approval.

It can be furnished with special construction to withstand corrosive fumes, and can be furnished with exterior baked enamel finishes in a variety of colors to harmonize with surroundings. Automatic temperature controls are provided to suit the processes for which the oven is to be used.

New Infra-Red Lamps

Seven new infra-red lamps, including four clear drying and three reflector drying types, with wattages ranging from 125 to 500, are announced by Sylvania Electric Products Inc., Ipswich, Mass., for many industrial heating services including plastic and metal preheating, baking, drying, and dehydrating.

The clear drying types provide a constant heat center length, which



Infra-red drying lamps by Sylvania

ENAMELS
UNDERCOATS
LACQUERS
SEALERS
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SHELLAC
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•

IN STEP WITH THE TIMES

Industrial Finishes

that make the most of available raw materials to give you greatest durability, together with attractive appearance and economy.

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JAMES B. DAY & CO., CHICAGO

permits a change in oven temperature simply by substituting lamps of suitable wattage. Reflector changes are unnecessary. This desirable feature has been engineered by Sylvania and is available for the first time in the new Sylvania infra-red clear drying lamps.

The reflector drying types offer an inexpensive and flexible infra-red heating source for many drying and processing applications, including those in paint shops.

Centrifugal Pumps

A new line of Superflo centrifugal pumps is announced by the Gray-Mills Co., 1948 Ridge Ave., Evanston, Ill.

Higher volume delivery per horsepower and ease of maintenance are features of these new pumps. The heavy duty motors are mounted integrally to the pumps for compactness, strength, and to provide a streamlined design.

The pump motors range in various sizes: 1/25, ⅛, ¼, and ½-h.p., with volumes of 9 to 75-g.p.h. Grease-sealed motor bearings and mechanical seals of the pumps require no oiling.

"Troxide" Cleans Metal

A new "pickling" agent to remove rust, scale, tarnish, and incrustations of cement and lime from metals is being marketed by Waverly Petroleum Products Co., Drexel Bldg., Philadelphia 6, Penna. Troxide, as this revolutionary new chemical is named, is a dry inert compound. It is non-eruptive, non-inflammable, and is said to present none of the occupational hazards common to acids heretofore used in pickling.

Unlike the conventional acid pickling-solutions, it is claimed that Troxide throws off no "acid-mist" or other toxic fumes which are pungent, corrosive, and harmful to workmen and machinery. Tests prove that Troxide attacks the scale, not the good metal, and the surfaces are left smooth, clean and bright; thus, the hazards of over-pickling are materially reduced. It is further stated that Troxide may be used either hot or cold, and lasts many times longer than the conventional acid pickling solutions.

By packing it in ordinary wooden barrels, the manufacturers point-up the claim that Troxide presents no occupational hazards. With Troxide, pickling becomes a simple, safe operation. Because of the ease of handling, all industries, large or small, can use Troxide to clean and reclaim ferrous, non-ferrous, and precious metals and metal parts.

New Brush-Backed Sanding Wheel

A new, brush-backed sanding wheel, the Sand-O-Flex, is announced by the Exactone Tool & Die Co., 4373 Melrose Ave., Hollywood 27, Calif. It sands, burrs, and smooths woods, metals, plastics, rubber products and many types of special materials. The outstanding feature of this sanding device is its adaptability to jobs that were formerly done only by hand.

The device consists of a central magazine which houses strips abrasive. Eight of these strips extend through the housing and are held against the work by tough bristles. The bristles "cushion" the abrasive, making it possible to get in and around corners, hollow and fluted surfaces, and small openings.

The body and cover of the Sand-O-Flex are cast from Zamak. Overall diameter (including brushes) is approximately 8-in. Weight fully loaded is about 2¾-lbs. Normal loading contains 20-ft. of abrasive. Reloading is done by unscrewing the serrated nut and removing the cover. A wide range of abrasives of various grits and grades are supplied for use with the sander. These cartridges, plus the

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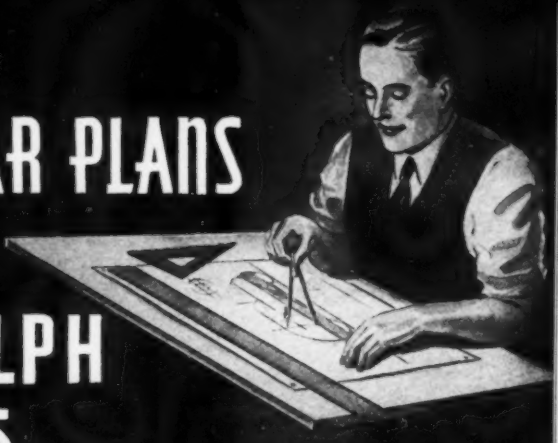
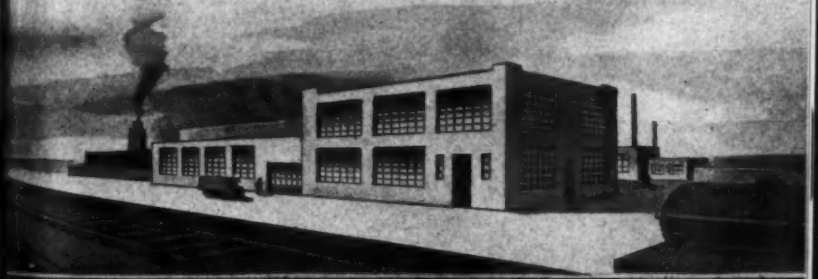


to contribute to the beauty, wear, performance
and value of your products

We invite you to consult with our staff of experts on technical matters regarding your finishing problems



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FINISHING PRODUCTS CO.

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quick-changing feature, permit the same tool to be used in all operations from rough stage to polished surface.

The Sand-O-Flex fits all standard ½-in. and ⅝-in. motor shafts, stationary or flexible, or can be supplied to fit almost any shaft size on request. A ¼-h.p. electric motor will handle all normal operations, as will most portable electric tools. Motor speed of 1750-r.p.m. is recommended, decreasing in proportion to the coarseness of the abrasive used and according to the results desired. No particular skill is required to operate it, nor is much pressure necessary to obtain results—the abrasive does the work. Light in weight, the sander is particularly suitable for use on a flexible shaft.

The Sand-O-Flex was originally conceived to sand and finish small wooden and plastic aircraft parts of unusual shapes. It was soon discovered that by loading it with a different abrasive, tool marks and burrs were quickly removed from metal parts. "Flash" from molded rubber products was instantly removed as were varnishes, enamels and other protective coatings. The Sand-O-Flex is also suggested for use in pattern making, automobile body and fender work, home workshops, for finishing and polishing jewlery products, removing platings and especially on irregular surfaces which were heretofore considered inaccessible. The Sand-O-Flex is the most inexpensive electrically driven sander on the market and shops everywhere are quickly recognizing its time-saving advantages.

Acid Pickling Inhibitor

An organic acid pickling inhibitor in powdered form, designated Pennsalt PM-40, is announced by the Pennsylvania Salt Mfg. Co. This material is highly stable and is completely soluble in pickling baths of either muriatic or sulfuric acid. It contains 100% active ingredients and is highly effective at such low concentrations as 0.02% to 0.10%, by weight of the pickling bath. Concentrations may be varied to meet plant conditions, production rate, and quality of surface desired.

This material effects economies in both acid and metal, while minimum quantities of inhibitor are required. Due to high base metal protection, the acid is consumed principally in scale and rust removal, with the result that the useful life of the bath is prolonged. Pennsalt PM-40 can be used in acid pickle baths prior to electroplating, galvanizing, and enameling, since it is free-rinsing and minimizes hydrogen absorption. Packaged in drums of 25, 100, and 200-lbs., it is available in commercial quantities for bulk pickling operations through the Special Chemical Division of the Pennsylvania Salt Mfg. Co., Philadelphia 7, Penna.

Hot-Dip Plastic Coating Tank

An electrically heated "double-boiler" dip tank in which plastic coating material can be heated for dip-coating small articles, is announced by Aeroil Burner Co., 5701 Park Ave., West New York, New Jersey.

Electrically heats dipping material.

One use to which this equipment is put rather extensively is to apply a removable protective coating on small tools, precision parts, gages, etc., which are to be stored, or shipped for long distances, before being placed in the hands of ultimate users.

This new model, known as the Plast-O-Dip Model 3, is electrically heated

Sterilkote THE ALL PURPOSE LIQUID PLASTIC

The Most Modern—The Most Versatile of All Present Day Synthetics. It can be applied in liquid or semi-paste form leaving a plastic coating firmly adhering to the surface—Sprayed films ranging from half mil to twenty mils.

APPLICATION—Sterilkote may be applied over metal, plastic or any other surface by spraying—dipping—roller-coating—brushing or doctor blading.

RESISTANCE — Sterilkote is Waterproof — Alcohol-proof — Withstands Oils, Acids and Alkalies and can be made Fungus Resistant.

DECORATIVE — Sterilkote can be made in a limitless variety of tints and shades—ranging from clears, pastels and irridescents to pure whites and all other opaque colors.

FOR STAMPING—Sterilkote is Hard and Tough yet it remains Permanently Elastic hence Sterilkoted Sheets of metal may be stamped, drawn and otherwise fabricated without cracking the film.

FOR LINING — Sterilkote container linings are tasteless, odorless and non-toxic. No elaborate surface preparation is required before applying Sterilkote hence Sterilkote is the best of all sanitary coatings and food container linings.

We invite you to write for complete information on STERILKOTE

BRADLEY & VROOMAN COMPANY

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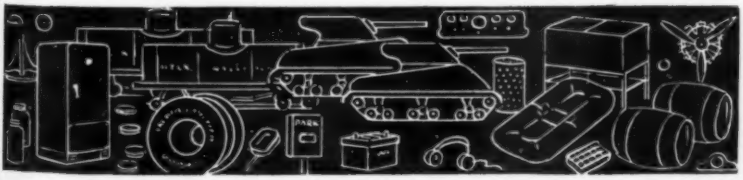

by means of a 1200-watt immersion element encased in a liquid-proof cover. This element delivers heat into an oil bath which completely surrounds the inner vat containing the plastic compound, thus providing indirect heat.

Hot oil tubes are strategically placed along the length and width of the inner vat to bring added heat from within the melting plastic compound itself. The temperature of this hot oil bath is rigidly controlled from 100° to 550° F. by a built-in housing containing a thermostat with knob dial and pilot light. A built-in dial thermometer recessed into tank wall is also provided for exacting temperature check.

Extra-heavy insulation is provided for walls, floor, and removable cover to minimize heat loss between dipping operations. The unit is equipped with a standard two-prong plug and approximately 7-ft. of cable, so that it can be plugged in any standard 110-volt A.C. or D.C. or 220-volt A.C. receptacle.

Resilient Waterproof Coating

A recently developed waterproof coating is now being widely used for roofs, walls, and other surfaces exposed to the elements. This material, called Liquinoleum, is said to have about eight times the protective thickness of paint. It is resilient and elastic. Thus it is highly resistant to extremes of temperature. Even after long exposure it will not crack, blister, or alligator.

Liquinoleum is unaffected by acid fumes or the effects of most chemicals. It does not crystallize on setting. Even flame from a blow torch will not cause it to catch fire, flow or run. No special labor is required to use Liquinoleum, it is readily applied to any surface with brush or trowel.

Full details and descriptive literature about Liquinoleum can be obtained from the manufacturer, Continental Asbestos & Refining Corp., 1 Madison Ave., New York 10, N. Y.

Small Parts Cleaner, P-72

The Gray-Mills Co., 1948 Ridge Ave., Evanston, Ill., announces a new small parts cleaning system, known as the Model P-72, and a new line of cold cleaning solvents called "Agitene." The P-72 is used for removing cutting oils and lubricants used in metal working operations and is ideal for many simple cleaning operations where small parts are to be cleaned in limited quantities.

Several outstanding features of the P-72 are the time-saving Air-gitator, which provides air agitation of the

Cleaning solvent is agitated by air.

(cold) solvent; swisher basket and platform; hinged cover; air hose and "T" connection. The size is 15½x-15½x11¼-in.

This unit has mounting brackets so it can be attached to the side of Gray-Mills larger model, the P-70 parts cleaning system, or to a wall or work bench.

Agitene (cold) cleaning solvents come in three types. Regular Agitene is for general purpose cleaning in removing cutting oils and other lubricants. Super-Agitene is a fast-acting solvent with a powerful penetrating action that quickly removes grease, tar and sludge. Speed-Agitene is used for hard accumulations, residual gums and grease deposits. It removes paint and sludge without harming metals.

Remember Pearl Essence for

A Decorative Finish

MEARLMAID Pearl Essence is being used on hundreds of different products to produce a decorative and attractive effect.

Investigate the numerous advantages of a Mearlmaid Finish before you select the final coating. Its sales appeal and merchandising value are important.

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Has High Reflective Light Value

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"WORLD'S LARGEST PRODUCER OF PEARL ESSENCE"

Blasts Out Fires Quickly

A new fast-acting portable fire extinguisher is announced by American-LaFrance-Foamite Corp., of Elmira, N. Y. It is the Alfite Speedex, made in 3 different sizes, Models 15, 10, and 4, and uses carbon dioxide as the fire extinguishing agent. The numbers indicate the pound capacity of the gas.

This new unit is engineered to more speedily extinguish small oil or electrical fires, with no loss of the important extinguishing gas on anything but the fire itself.

OK'd by Factory Mutual Laboratories.

The Speedex operating valve lever is directly above the carrying handle. It can be instantly opened by the pressure of the hand grip and as quickly closed by releasing the hand pressure while operator is maneuvering his position.

For continuous operation the D-yoke ring is slipped over the operating lever while it is depressed.

All models are approved by Underwriters' and Factory Mutual Laboratories. Models 4 and 15 also carry the approval of the U. S. Coast Guard. Illustrated literature is available from the manufacturer.

New Dust Collector

"We have just completed a multiplicity of tests on what we term an innovation in dust collectors. These tests have proved that it is possible to collect the most minute dusts and lints in a portable self-contained dust collector.

"Last August, after having presented a collector which we believed superior to any then in the field, we came to the conclusion that it still was not what it should be. Neither our unit nor any other collector in the field could collect the finest of dusts and therefore could not really be termed a dust collector.

"Consequently, since that time we devoted our time to develop a collector that could meet the requirements of this field. We are confident we have done so and therefore are not hesitating in submitting it to the manufacturers of the United States. We have already placed it in production."—Dust Filter Co., 160 N. La Salle St., Chicago 1, Ill.

Filmonize Cellophane Tape

A new line of printed Transparent "Filmonize" cellophane tape is available to users engaged directly or indirecty in a war industry. The tape is clearly transparent, with a high tensile strength. It is a product of International Plastic Corp., 10 Park Place, Morristown, N. J.

Ozar Joins Cowles Detergent Co.

The Cowles Detergent Co., Cleveland, Ohio, announces the appointment of Clarence G. Ozar to the staff of its Metal Cleaner Service Laboratory. Mr. Ozar received his degree in chemistry from the University in Detroit and comes to Cowles after 12 years experience in the metal-working industries.

Mr. Ozar's technical background and practical experience make him an extremely valuable addition to the Company's rapidly expanding metal-cleaner department. He will assist directly in solving metal-cleaning problems, both in the laboratory and field.

PAST...
PRESENT...
FUTURE...
Egyptian finishes held high pre-war position for excellence, for adaptability, for ease and economy of application.
Today, with so much of Egyptian's volume devoted to war, the same high position is maintained.
Isn't that a promise that when war's restrictions are lifted, Egyptian's position in the finish field will continue as it is...and long has been? We think so.
THE EGYPTIAN LACQUER MANUFACTURING COMPANY
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Inquiry regarding your post-war finish needs is invited.
EGYPTIAN
SPECIALIZED PRODUCTION FINISHES

Booklets Catalogs Circulars

Revised Data on Deoxidine

The American Chemical Paint Co., Ambler, Penna., has prepared for distribution revised data sheets on the use of its Deoxidine products for cleaning and conditioning steel products to properly prepare them for durable paint coatings.

Flat-Top Chain Conveyor

Bulletin No. 461, a 4-page folder on Rex Table Top Chain Belt, has just been published by the Chain Belt Co., Milwaukee 4, Wisc. The leaflet pictures and describes this new flat-top conveyor chain. It shows the outstanding points in construction and describes details which make this type chain different than others. The chain has wide application in industry.

Acid-Proof Cements

Quigley acid-proof cements, specially designed to meet the exacting requirements of chemical and metallurgical industries for cements which will resist hot or cold, strong or weak liquid acids and hot or cold acid gases, are described and their uses illustrated in a new 8-page bulletin. For a free copy, write Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

"Reflector-Infrared"

The Westinghouse Lamp Division has announced its 250-watt, R-40 bulb reflector type lamp, previously designated "Reflector Drying," has been renamed "Reflector-Infrared." The change was made to more properly identify the dual-purpose application of the lamp.

The former designation was often taken to mean that the lamp was suitable only for drying purposes and would not serve satisfacorily for other applications of infra-red or radiant heat. Actually, for the latter purposes, the lamp used for drying is equally as effective as the heat lamp.

Corrosion-Resistant Chain Belts

A new 4-page folder on Rex Z-Metal chain belts is being distributed by the Chain Belt Co., Milwaukee 4, Wisc. The bulletin gives interesting and practical information regarding Z-Metal chain belts and their application. One of the factors claimed for this type casting is its remarkable resistance to corrosion due to the patented process of manufacture. Some of the more popular type chains, available in Z-Metal are illustrated.

Metal Cleaner Folder

A 4-page illustrated folder that gives information about "Deoxidine" is being distributed by the American Chemical Paint Co., Ambler, Penna.

Quoting from the circular:

"Deoxidine eradicates visible and invisible chemicals—and, most important, it destroys handmarks and flux residues which remain when products are soldered.

"Thin coatings of oxide and annealing scale can also be removed in Deoxidine baths—and without the objectionable fumes that characterize pickling in sulfuric or muriatic acid, which have been used and are now only required for removal of heavy, tight scales, or thick, pitted, encrusted rust.

"In addition to cleaning the surface, Deoxidine minutely etches and properly conditions the clean metal for more durable paint finishes."

Adhesives; Rubber Cements

A new 12-page booklet on natural and synthetic rubber adhesives has been published by The B. F. Goodrich Co., Akron, Ohio. Directions for the application of natural and synthetic rubber cements are included. Copies can be obtained free.

Synthetic rubber cements designed to meet bonding requirements for synthetic rubber products are also described and instructions are given for their use.

An important part of the new publi-

"It's no use, Digby! S-I-P CLEEN-UP Polish takes off every finger print!"

Try the New

S-I-P CLEEN-UP POLISH

WITHOUT COST OR OBLIGATION!

Made by the makers of famous WEAR MASTER Finishes, S-I-P CLEEN-UP Polish whisks away dust and lint—removes finger marks and rubbing compound. Works faster . . . goes farther . . . makes *any* finish look better . . . increases the sales appeal!

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Just clip this coupon to your letterhead and mail it to us for a generous free sample of S-I-P CLEEN-UP POLISH. No obligation.

STANDARD INDUSTRIAL PRODUCTS, INC.

Wear Master

EVANSVILLE 4, INDIANA

cation is the discussion on how to choose the right kind of cement for various applications. The booklet also outlines the differences between the vulcanizing and non-vulcanizing types of rubber cement, and contains a table giving data on cement weights, colors, and base materials used.

Many of the general applications for rubber cements are listed in an alphabetical table, which includes the designation, by number, of the B. F. Goodrich adhesives recommended for successful bonding in each case.

The ABC of Shop Costs

Here is a little illustrated book of 48 pages, 5½x8½-in., bound between heavy paper covers, that contains 12 chapters on the subject indicated by the above title.

In a radical departure from the conventional text book style of dealing with production costs, the author has succeeded in making costs and their control, pleasant as well as informative reading.

It is priced at only $1.00 by Supervision Publishing Co., Inc., 95 Madison Ave., New York 16, N. Y.

Optimus Line of Detergents

The Optimus Detergent Co., 208 Church St., Matawan, N. J., has just announced a new line of industrial metal-cleaning materials, designed to cover a wide range of specific applications. Emphasis is placed on the use of the proper detergent in conjunction with the correct cleaning method. The new products are announced as available in alkaline, acidic, solvent and emulsion types. A 4-page illustrated folder describing the products entitled "Announcing Dependable Optimus Detergents" has just been issued.

Roto-Finish Bulletin

A new bulletin describing Roto-Finish—the accurate mechanical process for burring and smoothing metal parts—has just been released by The Sturgis Products Co., Sturgis, Mich. How to save manpower is described in the new Roto-Finish bulletin by showing how Roto-Finish mechanical burring and metal-smoothing may be performed by one operator, permitting transfer of skilled help to other vital production jobs.

Accuracy of the Roto-Finish process is illustrated and described with information presented on the closely controlled cutting actions that provide fine surface polishing to heavy grinding cuts.

Metal Cleaners, Strippers and Booth Compounds

A new 8-page bulletin of timely information listing products for rust removal, metal cleaning and degreasing, metal preparation for finishing, enamel strippers, pickling, brightening non-ferrous metals, spray-booth compounds, etc., is ready for distribution to manufacturers. For a free copy, write Klem Chemical Works, 1500 E. Woodbridge, Detroit 7, Mich.

Monroe Sander Corp. Gets Army-Navy "E" Award

The Monroe Sander Corp., Long Island City, N. Y., was formally presented with the Army-Navy Production "E" Award at the Waldorf-Astoria in New York City on Friday evening, April 27, 1945.

The "E" Flag was presented by Lt. Colonel Chester Mueller of the U. S. Army Ordnance who represented the Under Secretary of War, and was accepted on behalf of the Corporation by its President, Monroe H. Sander. Lt. Commander Charles E. Leete, R. I. N. M., Brooklyn, N. Y., representing the Under Secretary of the Navy, presented the "E" pins to the men and women of the Corporation and they were accepted on behalf of all by Peter Baum, one of the company's oldest employees.

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YARNALL
INDUSTRIAL FINISHES

have that PLUS factor because —in the making it's a "must" with Yarnall that provision be made for accomplishing *more* than minimum requirements. They never fail *because*, they have—"*Something to spare.*"

Industrial FINISHING

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Editorial

War Production Cuts

What to expect in the way of war production cuts is revealed in the following paragraph from the April 30 letter released by the National Paint, Varnish & Lacquer Association at Washington, D. C.:

"Some WPB controls on industry may be lifted in the next four weeks, and 25% may be discontinued in the next four months, with rate of arms production expected to decline about 40% within the next 15 months, WPB Chairman Krug told Congress, April 25. The War Department announced expectation of reduction in existing orders of munitions and other war supplies 'in substantial amounts over the next 60 to 90 days.' Heaviest cuts are expected in tanks, artillery and mortar ammunition programs. 'V-E Day has come on the industrial front and the tremendous task of unwinding the war production machine is under way,' is Wall Street Journal's interpretation. A program for relaxation of job control also has been submitted for War Mobilizer and Demobilizer Vinson by War Manpower Commissioner McNutt, it was stated."

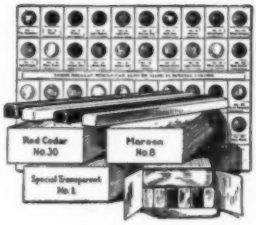
The "X" in Future Purchasing

★ Current experiences are teaching buyers in finishing plants and departments a lot about approach to mechanical perfection. Tolerances have been forced downward constantly until what was acceptable ten years ago would seem slipshod today. One sure development in the future buying will be tighter specifications, that industry may utilize in peacetime some of the lessons that were learned the hard way during wartime.

But the "X" in this situation does not come in setting specifica-

★ Guest Editorial . . . Many readers can write an excellent editorial — two or three paragraphs that present a timely suggestion or valuable idea which will stimulate real thought on a live subject. The Editor welcomes guest editorials and pays for those that are published.

WOOD CEMENT



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Cement Sticks
Lac Sticks

Behlen's Diamond B Wood Cement has been used and preferred by master craftsmen and professional hardwood finishing organizations throughout the country, for over 50 years. The extensive range of color shades, the even texture and the use of the finest raw material in the manufacture of Behlen's Diamond B Wood Cement have given it the nationally-recognized reputation it holds today.

Write for color card and list. Any shade, other than carried in stock, can be made to meet your specifications in six dozen lots or over.

FOR THAT EXTRA LIGHT REPAIR NO. 518 WILL DO IT

A COMPLETE LINE OF BURNING IN ACCESSORIES

Palette Knives, electric burning in knives, spatulas, glass lamps, electric knife heaters, flint and garnet finishing papers, pumice, rottenstone, New Wood, polishing materials.

H. BEHLEN & BRO., Inc.

HARDWOOD FINISHING HEADQUARTERS SINCE 1888

10 CHRISTOPHER STREET NEW YORK 14, N. Y.

tions so much as in the inspection of the equipment and supplies delivered. Where can the average finishing plant executive turn to for the modern apparatus and trained personnel to make certain he receives what he so painstakingly specified? Will the progress of the past few years be lost, in many instances, because the buyer has only prewar tests and equipment by which to judge the new and advanced offerings?

With the exception of the largest industries, I believe that most buyers will have to specify what they hope for, and trust to reliable suppliers for accurate deliveries. Not that this puts the buyer at the mercy of the supplier, for the company that has proved it can be trusted on other points, can be trusted on inspection reports, too. The supplier well knows that testing equipment and trained personnel will be available to the finisher before too many months have passed—and he knows that a lost customer will be the only reward for any concern that takes advantage of the present situation.

No buyer need feel ashamed to admit that he cannot immediately match his tests and inspections against the materials delivered to him. Even the Government faces the same problem. During an investigation the following testimony was offered by certain bureaus: "The . . . manufacturers supply an inspection system that the Government could not successfully duplicate under present conditions." Why, then, should the finisher hesitate to pick his sources of supply with one eye on the fact that they may be depended upon to handle some inspections which he is not yet ready to carry out in his own plant?

Because the finishing plant executive or department foreman never considers anything without finding what it does to his costs, he will be interested in further quotations from the same report: "There is considerable saving to the Government and a better job of inspection done through the present plan of buying from the . . . manufacturers, even though it is not apparent on the bare comparison of contract prices." This is just another way of saying that inspection costs money, and that it rates a correspondingly higher price on the market. Where the supplier has adequate equipment and personnel, does a conscientious job, and relieves the buyer of inspection worries and expenses, the extra cost appears to be justified.

Inspection need not remain a constant "X" in future purchasing for the buyer who remembers a few facts. For example:

1) At the outset, suppliers may be better able to carry out inspection programs. Later, the finisher may gradually secure facilities to assume this responsibility, at least in part.

2) Reliable suppliers can usually do this work cheaper than the buyer can do it for himself. Granted reasonable allowance for error, the results will be just as accurate.

3) If you have doubts about the value of your supplier's inspection setup, you have reason to doubt the value of the supplier himself.

4) Inspections carefully carried out should be given a more important place as a factor in price comparisons.

5) When a supplier's advertising doesn't go into detail on the point, it is worth a letter to find out what he is doing about inspections.—GEORGE M. DODSON.

Take a good Look!

If your product somehow just misses looking as well as you think it should, take a good look at the finish. Does it compliment the fine lines of your product and display it to the best advantage? If not, we offer the services of our Creative Studio, a group of artists experienced in the design of unique and flattering finishes. They will create a finish especially for your product which will add immeasurably to its appearance and sales-appeal.

If your production is now limited to war products, investigate our line of protective coatings. They meet all U. S. Government specifications.

Your inquiry will receive our prompt attention

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ROCKFORD VARNISH *Company*

ROCKFORD, ILLINOIS

Manufacturers of Protective and Decorative Coatings

How Long a Boom?—Reviewing Bernard Baruch's prediction that we will have five years of prosperity after the war, Ralph Hendershot, Financial Editor of The New York *World-Telegram*, comes up with a few blunt doubts. What most of our experts are worrying about, he contends, is the so-called period of normalcy after the war effects have worn off.

"Experience has shown that the longer booms last and the higher the levels they attain, the harder the fall afterward," he observes warily. "Indications are that we propose to ride the approaching boom as hard as we can, and that a rip-roaring time will be had."

* * *

Construction Practices — For a man who is generally looked upon as one of the country's topflight business leaders, Beardsley Ruml, chairman of the Federal Reserve Bank of New York, is a remarkably outspoken individual. He has frequently criticized unsavory industrial practices, and currently he is aiming some of his barbs at the construction industry.

Ruml contends that operations in this field are costly and wasteful, and he believes that a full-dress Congressional investigation is in order. "If some of the restrictive practices of the industry should be continued," he declares, "these practices should be sanctioned by law and supervised by an appropriate regulatory body."

* * *

After V-E Day — A terse summary of the prospective material outlook on the heels of Germany's collapse is offered by *Business Week*. Copper, lead and steel are expected to be in ample supply. Tires should ease, and building hardware will probably be plentiful in a short time.

With the end of military operations on the European continent, the situation concerning gasoline and fuel oil will doubtless improve almost overnight. It is a mistake, however, to assume that the death knell of Naziism will automatically solve all of our problems. Lumber, paper, textiles and containers are among the items which will continue to be scarce for many months.

* * *

Outlook for Rubber—Writing in *Chemical and Engineering News*, Dr. E. R. Gilliland predicts that our synthetic rubber factories will be operated at a high capacity for two to five years after the Japanese are driven out of the crude rubber-producing areas of the Southwest Pacific.

This expert believes that at least one million long tons of natural rubber per year will be available after restoration of the plantations. "It is probable that there will be a period of competition between synthetic and natural rubber some time in the period from 1949 to 1954," he forecasts. "After that, consumption may be large enough to take the full output of both."

* * *

Questioning Super Fuels — Although some aviation gasoline now runs well above the 150-octane mark, one expert doubts whether such fuels will be practical for ordinary peacetime commercial air

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WOOD and METAL
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PRODUCT DEVELOPMENT

RESEARCH AND PRODUCT DEVELOPMENT in all fields continues at an accelerated pace during the stress and strain and exigencies of war. In the field of chemistry progress during the war has been amazing. All types of synthetic resins, gums, nitrocellulose and other raw materials from which organic finishes are formulated and processed offer great possibilities because of research carried on during the war years.

The N.Y.W.S. Laboratories have been working with these new and improved materials to keep the NEW PERIOD production finishes in line with the latest developments. These new developments mean better finishes, faster drying and less man hours per unit of production.

Manufacturers who are looking forward to better finishes, speeding up production schedules and reducing costs, should be interested in NEW PERIOD Products. Submit your problems to our laboratory and we will gladly send working samples for a production test.

NEW PERIOD PRODUCTION FINISHES

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109 IMLAY STREET BROOKLYN, N. Y.
Established 1917

transport. This authority is Earle A. Ryder, consulting engineer of the United Aircraft Corp. In his estimation, 91-octane will be the base fuel for the bulk of such commerce.

"The more expensive fuels cannot be justified for most short-run operations," he observes. "For flights of more than 1500 to 2000 miles non-stop, the savings made possible by high anti-knock fuels will begin to pay."

* * *

Farewell to Aviation—Estimating that postwar production of civilian aircraft will be but 2% to 3% of present manufacturing capacity, the Firestone Tire & Rubber Co. has decided to cease building airplanes and parts when the war has been won.

"If others in our position would do the same," says John L. Cohill, head of the Firestone Aircraft Co., "it would simplify the whole postwar aircraft picture." His firm, however, will continue to turn out such aviation specialties as tires, wheels, brakes, fuel cells, cables.

* * *

More Training Needed—Industry must give considerably more thought to the training of postwar sales forces, in the judgment of Walter L. Faust, vice president of the Socony-Vacuum Oil Co. Too few people realize, he declares, that there were 8,000,000 men and women employed in the distribution fields before the war, and that there are now only 3,000,000 persons currently engaged in this activity.

This simple statement underscores the fact that millions of peacetime jobs can be found in sales work. Faust warns, however, that almost all employees will require refresher courses, and a large percentage will need extensive training. He feels that, in the midst of constant discussion of other postwar subjects, this important problem is being sadly neglected.

* * *

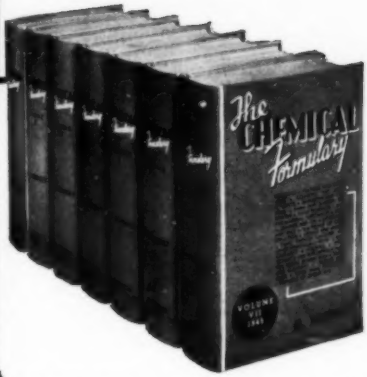
Scramble for Radios—The American Public is prepared to buy 100 million radios in the first five or six years after total victory, says Frank Mansfield of Sylvania Electric Products. His survey indicates a definite preference for combination radio-phonograph models.

Mansfield has gathered some interesting and noteworthy bits of information in the course of his investigation. More people, for example, reported that they will pay an additional $75 for television than will spend $10 extra for frequency modulation sets. On the other hand, he has been advised that almost anyone would spend $5 extra for FM.

* * *

New Merchandising Program—A radical innovation in sales technique has been developed for early peacetime adoption by the Monitor Equipment Corp. As announced by T. K. Quinn, president of the firm, 18 manufacturers of household appliances will produce products under the "Monitor" trademark. Distribution will be in the hands of 60 independent wholesalers, who will hold stock in the parent corporation, and in turn will supply some 7000 to 8000 retailers.

This program may be expected to have vast repercussions in the industrial field. Among the appliances for which manufacturers have been selected are refrigerators, radio television sets, air-conditioning units, sewing machines, home freezers and washing machines. If the program proves suc-



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Drugs	Bleaches	Oils & Fats	Fibres	Waterproofing
Farm & Garden	Ceramics	Liquors	Beverages	Metals
Specialties	Deodorants	Dyeing & Coloring	Flavors	Alloys
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will solve your problem. Remain tacky indefinitely. Non-combustible. At your Paint Dealer or write to Manufacturer.
DETRO SALES CO.
418 NORTH SAN PEDRO STREET
LOS ANGELES 12, CALIF.

SOLVENTS RECOVERED BY
THE LOFGREN PROCESS
We RECOVER YOUR
SOLVENTS & THINNERS
From - Sludge - Waste - Wash - Spoiled Lacquers, etc.
Each customer's shipment, whether one drum or a carload receives PROPER AND SEPARATE TREATMENT. Write to:—
SOLVENTS RECOVERY SERVICE
1019 Broad Street, Newark, N. J.
or
HAMMOND CHEMICAL SERVICE
241 Brunswick St., Hammond, Ind.

MISKELLA
INFRA-RED OVENS & APPLIANCES
INSULATED · REFLECTIVE · SECTIONAL
BY
INFRA-RED ENGINEERS & DESIGNERS
1633 E. 40th STREET · CLEVELAND, OHIO

cessful, at least 30 separate items will eventually be merchandised under the Monitor brand.

* * *

More Direct Selling — Another noteworthy straw in the wind concerning future sales policies is offered by the Mengel Co., Louisville, Ky., one of the largest manufacturers of hardwood products in the country. In a sweeping revision of its distribution methods, this firm now plans to sell branded, nationally advertised furniture direct to retail stores after the war.

The first line of merchandise to be affected will be bedroom suites. At the present time, Mengel sells case goods primarily to mail order companies, and occasional pieces through jobbers. The new plan is indicative of a revolution in marketing practices which the next few years will inaugurate.

* * *

New Fields For Glass—In addition to its present uses for light, vision and ventilation, glass is destined to be employed in many new ways in postwar living. E. P. Lockart, of the Owens-Illinois Glass Co., makes some interesting predictions in this respect, citing insulating material, air filters and draperies as a few random illustrations.

"Glass blocks have an insulating value in winter equal to an eight-inch brick wall," he emphasizes. Another possibility may be the employment of colorful glass in large slabs, making interior wall finishes which are permanent and easy to clean.

* * *

Purchase Intelligently—"We must buy only what we need, and resist the temptation to scramble for the most of what we can get." That blunt warning has been delivered to America's industrialists by Robert C. Swanton, president of the

I. C. D. FORMULA NINE
NON-INFLAMMABLE
« *wax free* REMOVER »

for paint, varnish, lacquer, baked enamel, adhesives

EASY TO APPLY—NO AFTER-CLEANING

ORDER TRIAL GALLON AT DRUM PRICE

I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings . . costs less to use . . saves time, labor and material.

SPECIALTY COATINGS—I. C. D. Labs. have specialized in the formulation and manufacture of non-inflammable coatings and substitute finishes. If you have a tough coating or finishing problem send in your specifications, finishing schedule and requirements. Immediate action and a prompt reply promised.

INDUSTRIAL CHEMICAL DEVELOPMENT CORP.

347 MADISON AVE. NEW YORK 17, N. Y.

National Association of Purchasing Agents.

In the opinion of this authority, "scare" buying will create fictitious demands for old and obsolete materials and products, which may leave many companies with unusable inventories. Another danger, Swanton cautions, is the consideration that uncontrolled buying will produce an inflationary period that will lead inevitably to more government interference.

Swanton, who directs the procurement program of the Winchester Repeating Arms Co., makes this added point: *one-half* of the postwar buying for the nation will be done by a comparatively small group of purchasing agents.

* * *

Gas Air Turbines—As an indication of the importance being attached to gas turbines for aircraft engines, the Westinghouse Electric & Mfg. Co. has organized a special division to handle this branch of its activities. Westinghouse perfected the first wholly American-designed jet propulsion aircraft engine to be tested in flight. Until recently, the company had been using facilities of its steam divisions to carry through this work.

In its present form, the Westinghouse turbine is a straight-line producer of power. Eventually the whole jet propulsion power plant will be much smaller, more compact, and more direct in its action than other designs using the much larger centrifugal compressor.

* * *

For Visitors—Readers of INDUSTRIAL FINISHING are reminded that free tickets to many leading radio broadcasts may be obtained on request. When planning a visit to

New York, drop a line to: *Lawrence H. Singer, 130 West 86th Street, New York 24, N. Y.*

Among the cooperating sponsors are: Tangee ("Sammy Kaye's Varieties"), Bourjois ("Evening in Paris") and Camel Cigarettes ("Thanks to the Yanks").

More Construction

Substantial increase in construction volume in the 37 states east of the Rocky Mountains during the first quarter of 1945, as compared with the similar period of last year, is reported by F. W. Dodge Corp. on the basis of its field-staff reports.

The main increase in activity was in nonresidential construction, especially buildings used for manufacturing purposes. During the first three months of this year publicly owned construction accounted for 60% of all contracts awarded, while during the first quarter of 1944 publicly owned construction accounted for 77%.

The first quarter's volume exceeded that shown for the first quarter of the year 1938, and compares favorably with the volume shown for the first quarter of of 1937 and 1940.

Remove Production Line Dust, Lint, and Sand Particles with this Soft Tacky Cloth before applying finish.

CRYSTAL TACK RAGS

Gross Lots Available Thru Paint Dealers or from the Processor.

Baughn Chemical Products Co.
8151 So. Crandon Ave., Chicago 17, Ill.

NALCO

Infra-Red Ray Lamps

Best for Infra-Red Ray Baking and Drying

Carbon Filament Lamps, service proven, available in Inside-Silvered (self-reflecting) or in Clear Glass types. Write for details.

North American Elec. Lamp Co.
1030 Tyler St. St. Louis 6, Missouri

Stop Wasting Precious Finishing Materials

★ As the end of the war draws nearer and as we go all out in the final "big push" for Victory, finishing materials are becoming more scarce and difficult to obtain for civilian production. Let us look around and strive to eliminate, so far as possible, all wastage of these precious materials and supplies.

In the average finishing department, several thousand dollars worth of expensive materials are wasted each year. A large portion of this waste is caused by carelessness. It can be eliminated by alertness on the part of the foreman finisher and the employees under his supervision.

New or inexperienced employees often waste materials without realizing what it means. Many of the old employees become careless and sometimes indifferent with the materials they use. They should be taught the value of finishing supplies and how to conserve them so as to eliminate wastage.

Here are some places where materials are wasted, and how they could be conserved: Barrel bungs

★ Guest Editorial.

AIRPLANES
GUN STOCKS
BOMB SIGHT BOXES
TOOL CHESTS
MARINE PARTITIONS
RADIO INDUSTRY, ETC.
SKIS
INSTRUMENT BOXES

ON THE EVE OF "V-E" DAY

THE DAWN OF A BETTER DAY is approaching as this goes to press. The prayers and hopes of hundreds of millions of free and liberated people are about to be fulfilled.

There will be "V-E" Day celebrations throughout the world by joyous people who will realize that there is still much hard fighting and hard work ahead.

Huge forces will have to be transported many thousands of miles to the Pacific front for the final push against the Japanese. This operation will require all of our transportation and shipping space. Let us dedicate ourselves to this job with renewed vigor.

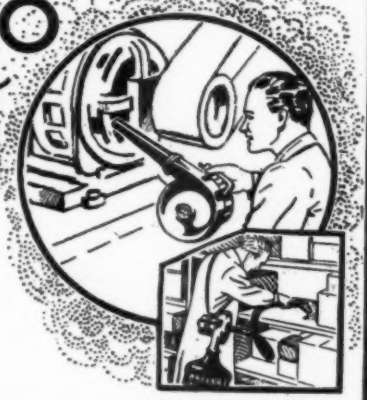
Listed here are a few of the war products now being coated with our materials. Phone, wire or write and let one of our finishing experts help you "keep production rolling."

SUPPORT THE 7TH WAR LOAN — BUY AN EXTRA BOND

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875
7430 STATE ROAD PHILADELPHIA 36, PA.

TORNADO
settles your
DUST
problem



DUST will be LESS of a problem with the TORNADO Portable Electric Blower to blow it out of motors, generators, shafting, bearings, etc. TORNADO blows out dust, dirt, lint—with its swoosh of clean, dry air.

Powerful 1 h.p. universal motor makes it easy to clean largest motors or generators without dismantling them. Plugs in at any electric outlet.

Costs less than 3c an hour to operate. Weighs only 14 lbs. Investigate!

Write for details and FREE TRIAL Offer

BREUER ELECTRIC MFG. CO.
5094 N. Ravenswood Ave., Chicago 40

TORNADO

DUPOR

TWIN FILTER

RESPIRATOR No. 4

The favorite of users everywhere to guard against paint spray vapors and nuisance dusts! Made of soft, high grade rubber, foldable, reversible, fits any shaped face. Equipped with face cloth, it presents the utmost in comfort. Weighs only 4 oz. Does not hinder conversation. Price $19.80 doz.

Sample $1.65 pp.

H. S. COVER, South Bend, Indiana

Just for the Record

REMEMBER THESE NAMES

After V-day they will mean something to you!

▼

CEL-U-LAK

A complete line of cellulose derivative lacquers and enamels.

▼

FORM-A-ROC

A unique line of quick-baking, tough adhesive synthetic enamels.

▼

THE VARNISH PRODUCTS CO.

5208 Harvard Avenue Cleveland, Ohio

are left open and covers are left off pails and containers, thus allowing dust and dirt to enter; this soon makes the materials unfit for use. It also allows precious and vitally important solvents to evaporate, which lowers the durability and quality of the material. All bungs and covers should be replaced on containers immediately after taking portions of material from them.

In spray finishing it is important to use the proper air and fluid pressures, and the right type of needle and tip and air cap at all times. Often a spray operator, by using the wrong air and fluid pressure, improper type needle, tip and air cap, wastes at least 25% of the material he sprays; it is deposited around his spray booth and goes out through the exhaust stack.

Another wasteful practice that you find in some finishing departments is the discarding of only slightly used wiping cloths. These cloths are expensive and scarce now, yet many workmen discard them before they have served their full usefulness. Some concerns either clean these used wiping cloths or send them away to be cleaned, so the cloths can be used over and over again. Many times sandpaper, steelwool, brushes, etc., are discarded before they are worn out. This waste can run into a lot of money in a few months time.

Dust and dirt are allowed to accumulate in some finishing rooms, and eventually some of this falls or blows onto the wet finish of furniture, causing rejects and expensive refinishing of the goods.

In mixing stains, fillers, etc., care should be taken to mix no more than enough for the lot of furniture in process, as any left-over material will have to be thrown away. For instance, if a

MSA FEND·A
BARRIER
SKIN PROTECTION

Rubbed-in on clean skin before work, this vanishing-type FEND cream protects against dirt, paint, enamels, lacquers, inks, oxides, grease and other irritants—is easily removed with soap and water at work's end. Send for complete FEND facts, in 20-page descriptive Brochure!

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Streets
PITTSBURGH 8, PA.

SAVINGS up to 25% of your Finishing Cost!
with a G. M. No. 5 PRESSURE SPRAY GUN
Patented Nozzle Reduces 25% Mist and Saves Paint

Better atomization, greater speed, G. M. Gun lays material more uniformly on object. Excess mist eliminated; paint saved. Patented nozzle with combination of external and internal atomization gives double breakage; finer atomization. From 1/8-in. to full wet 14-in. fan spray. Very moderate price. For details write Dept. L.

G. M. MANUFACTURING CO.
Engineers, Mfrs. of Complete Spray Equipment
216 N. Clinton St. Chicago, Ill.

TECTYL
STOPS RUST

No ifs or buts—Tectyl, applied to the surface of metal, STOPS rust. The thin film (transparent, so you can *see* the metal all the time) *seals* out the possibility of corrosion for as long as two years. Tectyl is economical to use—easily applied by spraying, dipping, brushing, or flushing—and comes off quickly, cleanly with kerosene.

There is a

TECTYL

product for EVERY rust problem

VALVOLINE OIL COMPANY
431 Main St., Dept. 24 E, Cinn. 2, Ohio
Refinery at Butler, Pennsylvania
New York-Atlanta-Detroit-Chicago
Los Angeles-Vancouver
Washington, D. C.

MIRACLE

5 Gallon BLUE BOY Model

PAINT REJUVENATOR

Restores Paints, Lacquers, Enamel Products and Pigment Primers, to original consistency in 3 to 10 minutes without opening the can. Available for Round or Square 5-gallon cans. Explosion-proof electrical equipment if desired. Also other units from ¼-pint to 50-gallon drum capacity available. Originators of Paint Rejuvenating equipment—ten years—thousands of satisfied users.

Miracle Paint Rejuvenator Co.
127 E. 9TH STREET ST. PAUL, MINN.

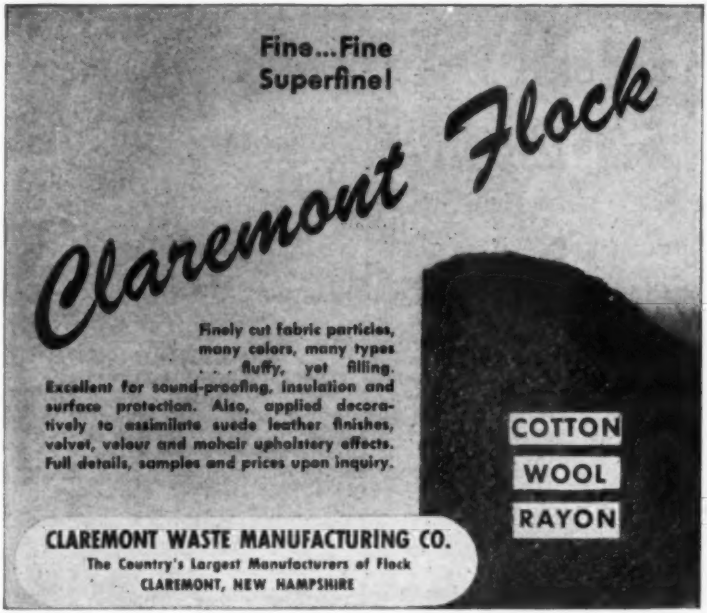
lot of lime oak or light colored furniture is going through the finishing department, and an order of mahogany is to follow the light colored furniture, then the leftover fillers, stains, etc., from the light colored furniture certainly cannot be used on the mahogany suites, so they must be discarded.

I have mentioned only a few of the many places where vitally important and expensive finishing materials are wasted. There are many other places where similar wastage exists. It requires constant vigilance to find and stop these leaks. It is up to the foreman finisher to eliminate them as far as possible in his department. By doing this he will not only save much precious material, but he will save his employer thousands of dollars annually.—H. W. CHESTER.

Plastics and Plastic Coatings

★ The word "plastic" seems to have a magic effect upon the majority of industrial executives. However, even though plastic and plastic coatings do have many war uses, I believe that only a few manufacturers recognize the full possibilities of the plastic coating for extending the life, enhancing the appearance and insuring the functional performance of their civilian products.

Development of many new plastics and the discovery of new facts about the older ones make it difficult, even for men in the plastics industry, to keep up to date on the subject. Nevertheless almost everyone is interested. To satisfy this interest with clear easy-to-understand facts is not so easy. There are books for plastic technicians, chemists and engineers, but few of


Fine...Fine
Superfine!
Claremont Flock
Finely cut fabric particles, many colors, many types . . . fluffy, yet filling. Excellent for sound-proofing, insulation and surface protection. Also, applied decoratively to assimilate suede leather finishes, velvet, velour and mohair upholstery effects. Full details, samples and prices upon inquiry.
COTTON
WOOL
RAYON
CLAREMONT WASTE MANUFACTURING CO.
The Country's Largest Manufacturers of Flock
CLAREMONT, NEW HAMPSHIRE

practical value for the modest-sized manufacturer who has no laboratory or technical facilities. In the near future these plastic-minded individuals and industries, however modest, will find abundant information to satisfy their hunger for more facts about plastic and plastic finishing.

The extensive use of these finishes during the war has given the industry a sound foundation on which to build. The globular scale of the war has afforded an opportunity to test these finishes under a wide variety of climatic conditions.

Plastic coatings can add warmth and protective qualities to wood and metal and give new beauty, strength and performance qualities to paper, textiles, rubber, glass and many other materials. Plastic coatings are indeed versatile, and indusrty, with the help of science, will continue to increase their uses and improve their properties.

When it comes to industrial finishing, many small manufacturers feel somewhat handicapped. In most instances these smaller industries expect their superintendents to double as production finishing experts. Also, as the superintendent of one manufacturer insisted, they have no room for a modern setup for product finishing.

Among the outstanding examples I have in mind at the moment, is a clear plastic coating for metal

NATIONAL PAINT DICTIONARY

Second Edition

$7.50

The second edition of The National Paint Dictionary by Jeffrey R. Stewart is more than a dictionary; it is really a one-volume encyclopedia of illustrated information conveniently arranged alphabetically and attractively presented in 224 pages 9x12-in. It contains approximately 200 illustrations and charts; includes definitions of trade names and raw materials used in the paint and allied industries; has charts, tables, useful information and miscellaneous data; describes all of the important testing devices and apparatus used in the laboratory; is strictly technical, thoroughly authentic and completely unbiased.

The author, Jeffrey R. Stewart, F. A. I. C., is editor and publisher of the National Paint Bulletin. He was formerly associated as research chemist with Dr. Henry A. Gardner of the National Paint, Varnish & Lacquer Association.

The heavy green covers are attractively embossed and have raised gold letters on a panel of red. The price of this elaborate volume, which looks like $15.00, is only $7.50.

★

INDUSTRIAL FINISHING

1142 N. Meridian St., Indianapolis, Ind.

tools of all kinds. It is specifically engineered for the particular product. In this instance, the manufacturer has economized on space required for finishing by installing conveyorized dipping and infra-red drying. He has obtained exceptionally good results.

I believe that hundreds of modest sized manufacturers could likewise improve the sales appeal of their products and at the same time cut the cost of their product finishing. —JAMES F. BARNET.

Will Make Protective Coating Materials

Announcement has been made of the organization of the Peninsular Chemical Products Co. which will manufacture complete lines of protective coating materials for the plating industry and for other industrial uses.

President of the new company is M. C. Brennan who is also President of General Industrial Products Co. of N. Y. Associated with him will be three former executives of Michigan Chrome and Chemical Co. of Detroit.

The company has purchased a plant at 6795 E. 9-Mile Road, Van Dyke, Mich., and is starting immediate production of rack-coating lacquers, masking lacquers and tape, stop-off wax, maintenance paint and specialized protective coatings for industrial purposes. A layout dye, used as a background for preparing scribed layouts on metal, will also be manufactured.

Reprinted I. F. Articles Free

Reprints of the following feature articles, previously published in Industrial Finishing Magazine, are available and will be sent free to those who write in and specify which articles they desire:

"A Film Is Born" or "What Makes Paint Dry," by Paul O. Blackmore (24 pages).

"Zinc Chromate Primers," same author (16 pages).

"Finishing Aluminum with Paint Coatings," by Robert I. Wray (12 pages).

"Tumble Finishing," by R. J. Fairburn (8 pages).

Each of the above named articles is timely, interesting, informative and authoritative, and many requests for copies have been received.—Editor.

REGOLAC

A new line of finishes for wood and metal surfaces. Made by the manufacturers of world famous Titanine Aircraft Finishes—.

DIVISION OF TITANINE INC.
Union, New Jersey

Look Over I. F. Two or Three Times

★ I assume that no executive or foreman in the finishing or product painting department would think of skipping the advertising pages in this magazine. Yet he may be missing some of the opportunities because his study of advertising has fallen into a rut.

For example, he may refer to the advertising in INDUSTRIAL FINISHING for help on his postwar problems, and become so engrossed in this one angle that he overlooks certain developments from the here-and-now standpoint. Possibly he has been searching for equipment to improve his present markets, when he also needs something to widen that market itself. Or he may have formed the habit of eliminating from consideration all advertisements of products that do not seem to fit his current procedures, yet his greatest chance for progress can easily lie in a willingness to change even the fundamentals when something basically better has been found.

Note that the executive or foreman finisher gains something definite from the advertisements, even when his reading is of the "one track" kind. But while he is at it, why shouldn't he get all the value possible from these pages? I suggest the following system for the finisher who wants to get the maximum help in meeting competition, current conditions, or postwar opportunities:

1) List all of the angles from which advertisements might aid you, revising your list as circumstances change. Keep this handy and check the advertisements against it. Soon it will be almost as easy and as quick to pick all the good points as it formerly was to check on just one angle.

2) If you prefer, give each issue two or three readings, each from a different viewpoint. You'll be surprised how rapidly this can be done, and how thorough your understanding of offerings in the finishing field will be when you have completed this pleasant task.

3) Discuss advertisements often, either as a feature of regular organization meetings or as the main topic for informal get-togethers. Perhaps some of the other men have found interesting sidelights that you have missed. Every man in the plant has a slightly different slant on things—depending on his work, experience, and outlook—so it pays to spotlight the advertisements with all of these varied attitudes. Only in this way can you squeeze out all the good ideas from these printed pages.

4) Problems have a monthly routine, in some respects. If you read your copy of this magazine at the same time each month, you see advertisements largely from the angle of this recurring problem. Go through these pages again a week later, and again in two or three weeks. New problems will be uppermost in your mind then. You'll see fresh aspects of the same advertisements, and your reading quickly leaves the old rut for a broader viewpoint.—G. M.

Doster

BOOTH KOTE

Doster BOOTH KOTE is the easiest, fastest and most economical way to KEEP SPRAY BOOTHS CLEAN of overspray.

Just daub it on—

and when loaded with paint and lacquer—

Just scrape it off—

as easy as peeling an orange. A boy can do the job, easily. Protects booth, tunnel and fan.

In 5-gal. cans at $1.25 per gal., F. O. B. Factory

INDUSTRIAL DIVISION

Doster & Company

4840 W. Superior, Chicago 44, Ill.

C. P. Pesek Advanced in 3-M Co.

Appointment of C. P. Pesek, Minneapolis, as administrator of engineering of Minnesota Mining & Mfg. Co., St. Paul, is announced. W. A. Thomas, St. Paul, assistant chief engineer, is made engineering consultant on Mr. Pesek's staff.

Mr. Pesek, former University of Minnesota basketball star, has been with 3-M Co. since January 10, 1944, preparing plans for expansion of plant in connection with the firm's plan to resume its prewar expansion program in the immediate postwar period.

Book of Testing Coatings and Surfaces for Wear

A colorful illustrated bulletin of new information about accurate methods and instruments for testing all kinds of paint coatings for their resistance to various kinds of wear has been prepared and is now ready for free distribution by Taber Instrument Corp., North Tonawanda, N. Y. It contains 16 pages 8½x11-in. and is printed on high quality paper. The bulletin is well worth having on file for present and future reference.

Automatic Conveyor — Dipping, Baking, & Silk-Screen Printing— Also Assembly—Stamping & Japanning.

FINISHING & STAMPING DIV.

AMERICAN DECALCOMANIA CO., INC.

4334-5th Ave., Chicago 24, Ill. Kedzie 8144

Sealing Material for Porous Castings

WHILE the light-weight metals —aluminum and magnesium —have many merits, it is well known among experienced engineers that castings made from them show a pronounced tendency to develop porosity. This does not affect their mechanical strength, nor does it alter their status of utmost essentiality to aircraft manufacture. The porosity, however, results in leakage of liquids and vapors in lubricating, cooling and hydraulic systems.

When it could be obtained, tung oil was used effectively as a sealant, but tung oil in sufficient quantities is no longer available for this purpose. Working against time and under conditions of utmost urgency, one company's research chemists perfected new impregnants at a time when the shortage of tung oil threatened to bottle-neck an important segment of the aircraft industry—notably that portion concerned with the production of B-29 bombers.

When the first sizable quantity of the synthetic sealant was ready for use, only two days' supply of the natural product remained in one of the largest and most important airplane motor factories.

The new sealants make a complete, three-dimensional permeation of the castings, filling the millions of microscopic hollows which they contain without changing their appearance or affecting precision tolerances. After being impregnated, the castings are heat-treated to change the impregnant from a liquid to rubbery solid form.

The manufacturer predicts that this new development will for all time eliminate the need to rely on tung oil for impregnation of castings. The new materials, it said, provide greater sealing efficiency, greater ease of processing, and full resistance to conditions imposed in aircraft operation.

The series of sealants which survived both initial and final tests, and which the company intends to continue in production after the war, were identified as being of the Thalid X100 series. These are special adaptations of a family of Polyester type resins used in low-pressure lamination to all but eliminate size as a limiting factor in the plastics industry. In other words, they make possible the production of plastic objects whose dimensions far exceed those of compacts, table radio cabinets, telephone housings and other items of common usage. *(From a News Release by Monsanto Chemical Co.)*

Jones-Dabney Automotive Div'n. Moves to Detroit

William C. Dabney, Vice President of Devoe & Raynolds Co., announces that the Jones-Dabney Division of Devoe & Raynolds will move its Automotive Division to Detroit, Mich., utilizing property on the Grand Trunk Railroad adjacent to the Truscon Laboratories. The acquisition of Truscon Laboratories by Devoe is announced elsewhere in this publication.

P. P. G. Co.'s Chemical Div. in San Francisco

I. G. Stewart, who has had 22 years' experience in the heavy chemical field, has been appointed manager of the new San Francisco office of the Pittsburgh Plate Glass Co.'s Columbia Chemical Division.

The new district sales office is being opened to serve buyers of heavy chemicals on the West Coast, and follows the acquisition of the Pacific Alkali Co., Bartlett, Calif., by the Columbia Chemical Division of the Pittsburgh Plate Glass Co.

The new office will be devoted only to the sale of heavy chemicals and was installed because of the increasing importance of West Coast activities in the Nation's industrial economy.

Classified Advertising

Rate: 50 cents per line per insertion—minimum $1.50

FINISHING FOREMAN WANTED.

Experienced in mass production and capable of handling labor, by a large chair plant located in North Carolina. Address IF-190, Industrial Finishing.

WANTED.

Line of industrial finishes for Milwaukee territory, by successful mature man well acquainted with trade. Strictly commission basis. Best of references. Address IF-191, care Industrial Finishing.

SALESMAN WANTED.

Manufacturer complete line of industrial finishing material has territory open in middle west now producing high volume. Man required must have good practical and technical knowledge of industrial coatings. Sales experience preferred. Salary and bonus. Address IF-193, Industrial Finishing.

DESIGN ENGINEER WANTED.

Design and development of Pump and Spray Equipment for applying paints, mastic, sealers, insulating material, etc. Must have practical design experience in paint spray equipment and have the ability to follow through to completion. Give complete information regarding age, training, experience, draft status, and salary expected. Address IF-194, care Industrial Finishing.

FORBES BAKING PRIMER

100 — 55-gal. drums Forbes Dark Grey Baking Primer @ 40c.

In excellent condition. All or part. No priorities required. RAND CHEMICAL PRODUCTS CO., 2335 So. Mich. Ave., Chicago 16. Phone CALumet 2866-67.

FOR SALE.

13 — 55-gallon drums — Phenolic Varnish Jones-Dabney specification AXS-736 at $.95 gallon.

30 — 55-gallon drums — Gray Lustreless Lacquer—WD-21—Zapon—at $.80 gallon.

All in excellent condition, all or part F. O. B. New York. COMMERCIAL SALES CO., 410 Long Beach Rd., Oceanside, N. Y.—Tel. Rockville Centre—590.

SALESMEN WANTED.

Manufacturer of quality lacquer and furniture finishes has openings for several salesmen in northern Indiana, northern Illinois, Wisconsin, Minnesota, Michigan, Iowa, Ohio, south and southeastern states. Men with established following considered first. Applicants give full particulars of territory desired, experience, age and other pertinent information. Address IF-192, care Industrial Finishing.

PAINT SPRAY EQUIPMENT.

72-ft. drying oven complete with 350-ft. monorail and drive. A dandy unit ready to be installed. Can be inspected at the address below. We also carry a complete line of BINKS spray equipment, guns, tanks, filters, hose, etc. Our engineers are ready at all times to help you with any spraying problems that may arise. Call us for a trial. RICE EQUIPMENT COMPANY, 1831 S. State St., Chicago 16, Ill. Phone VICtory 4323; 4344.

FOR SALE.

1 only—Young Brothers Single Compartment Continuous Conveyor Japanning Oven—12'6" wide x 9' high x 23' long overall, direct gas heat, automatic temperature control, mechanical ventilation. Conveyor medium consists of two matched 6" pitch chains on 11'0" centers, with cross rods on 24" centers. Conveyor medium inside oven approximately 28' long. Included is paint dip tank. Price $3,000 FOB Westerville, Ohio. THE KILGORE MFG. COMPANY, Westerville, Ohio.

Electro-Plating Man

Man with good personality, inclined towards sales who has had experience in metal shaping, forming or finishing field, preferably with heavy experience in electroplating. For problem work with service representatives of manufacturer of materials having wide use in entire industrial field. Excellent post-war future. Location New York City, some traveling. Give details, age, experience, salary desired. If qualifications are of interest, interview will be arranged at our expense. BOX 567, Church St. Annex, New York Post Office.

IT'S UP TO YOU TO HELP MAKE 2-3 WITH...

A job for seasoned executives—this 7th War Loan! Especially when we've got to make 2 war loans total just about as much as all 3 in 1944! This demands the combined and *continued* efforts of the "No. 1" men of American industry.

This means marshaling your plant drive to make every pay-day 'til June 30th do its share. Directing the drive is not enough. Check to see that your directions are carried out—intelligently!

For example, has every employee had:

1 **an opportunity to see the new Treasury film, "Mr. and Mrs. America"?**
2 **a copy of "How To Get There," the new Finance Division booklet?**
3 **a new bond-holding envelope with explanation of its convenience?**
4 **7th War Loan posters prominently displayed in his or her department?**
5 **information on the department quota—and an urgent personal solicitation to do his or her share?**

Meeting—and beating—your highest-yet 7th War Loan quota calls for "No. 1" executive ability. Your full cooperation is needed for a fine showing in the 7th! Do not hesitate to ask your local War Finance Chairman for any desired aid.

The Treasury Department acknowledges with appreciation the publication of this message by

INDUSTRIAL FINISHING

This is an official U. S. Treasury advertisement prepared under the auspices of Treasury Department and War Advertising Council

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